CONSTRUCTION NEWS

EDITORIAL COMMENT, PERSONALS, ENGINEERING SOCIETIES, INDUSTRIAL NOTES, TRADE PUBLICATIONS.

H. P. GILLETTE, Editor.

Supplement to ENGINEERING NEWS. Thursday, July 30, 1903.

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For drilling holes in cemented gravel, hard clay or soft rock which must be loosened up in front of the steam shovel the machine now most commonly used is quite primitive. It consists of a long bar of steel with a cutting bit on the lower end and two or more Italians on the upper end. This machine does not move as fast as a comet or as slow as a glacier—but it moves and can be counted upon not to get stuck. A steam or air drill in such material is apt to be a nuisance because the bit is continually sticking. There is however, another kind of power drill that can be relied upon to keep at work steadily in all kinds of soil. We refer to the common well driller used in drilling for water or for oil. In this issue there are given some cost data of drilling prospecting holes with the well driller in California, and the contractor doing excavating work will do well to read the article referred to. This is especially to be recommended in view of the fact that we shall later describe the use of such well drillers in drilling holes in shale and sandstone along the line of the Pennsylvania R. R. The holes so drilled are "sprung" with dynamite and charged with blasting powder, breaking down in some cases a face 60 ft. high in front of the steam shovel. We shall not go into this matter at greater length now, but in a subsequent issue shall give the cost of this way of drilling holes on the Pennsylvania work.

Desirability of Sending Specifications to This Journal.

In another part of this issue will be found a list of contracts, the specifications for which are on file in our New York office. It is our wish to have specifications and bidding sheets of all kinds of engineering works sent to us, as soon as the work is ready for letting. We often receive inquiries as to the nature and size of a given contract and could give a quick reply were specifications always at hand. Moreover there are many contractors who call at our New York office in person to ask for information that can be given in detail only when we have the specification on file. The increasing number of such inquiries and calls leads us to believe that prospective bidders will often be greatly aided in bidding upon work if there is some one place in this large city where specifications for pending work are to be found.

Specifications should be filed with us as soon as possible after preparation, for it often happens that a desirable contractor is far from the work, and it is always more satisfactory to him to have an opportunity of reading the specifications before he decides whether he will go to the site of the distant work or not. Specifications thus filed with us are also useful in enabling us to give fuller descriptions of proposed work in our news columns. Thus it appears that in more ways than one will it be to the advantage of those having work to let to send us at least one copy of the specifications and bidding sheet together with plans, when the latter are not too bulky. When several copies are sent, we shall distribute any extra copies among contractors who ask for them.

A Concrete Mixing Specification.

Here are some abstracts of a public works specification for concrete:

> The mortar shall be spread over the layer of crushed stone and the mass shall then be thoroughly mixed by turning three or more times with shovels and by using hoes at the same time to help the shovels to mix the batch. . . .
>
> Concrete shall be deposited in layers not exceeding 9 ins. in thickness before ramming. . . . No concrete shall be slid down a chute or thrown to the place where it is to be laid, but it shall be carried and deposited without dropping or rolling.

We shall not dwell upon the paragraph requiring the use of hoes further than to say that a hoe is very rarely seen nowadays as a tool for concrete mixing, and that a hoe is a nuisance where shovels are used. Furthermore one cannot tell how much or how little a hoe does in the way of turning the stone and mortar over. The restriction imposed upon the contractor in depositing the concrete we may profitably consider at greater length.

In the track depression work now going on along the line of the Delaware, Lackawanna & Western R. R., in Newark, there are miles of depressed retaining walls to be made; and to have required that every yard of concrete be lowered in buckets would have added materially to the cost of construction. There are stretches of wall where the concrete is wheeled from the mixers in barrows and dumped into a galvanized iron hopper provided with a 10-in. pipe of the same material. This pipe is made in short sections that telescope one upon the other, like stove pipe, so that the pipe can be shortened as the wall rises. We have examined with care the concrete as it lies at the foot of the pipe after spreading it with shovels, and have been unable to discover that it is any the less well mixed from having traveled down the chute. Doubtless the author of the specification above quoted had had experience with open chutes or troughs laid on a rather flat slope so that the concrete rolled rather than fell. Where material thus rolls down a slope there is always segregation; the larger pieces travel faster so that they become separated from the smaller pieces. This segregation is also noticeable in the bins that receive stone from a crusher, and in fact wherever there is rolling. On the contrary, where there is a free fall or sliding in mass in a closed chute there is practically no separation into sizes. Where concrete falls freely through the air a distance of 15 or 20 ft., it is also doubtful whether there is any separation of materials. Certainly there is none during the fall, for the air will not blow the mortar away, but when the mass of concrete strikes, some separation may occur. However, it is no uncommon thing to see excellent concrete walls that have been built by dropping small car loads of concrete directly into the forms from heights of 20 ft. or more. But where there is any doubt as to the advisability of permitting a free fall, as where it is feared that the jar may injure concrete already partly set, we see no logical objection to the use of an iron pipe chute through which to deliver the concrete.

Notes on Crushing Stone.

A very common design of stone crushing plant is that in which a large gyratory or "coffee mill" crusher is used to break up the stone. The stone is then elevated and passes through a rotary screen. The crushed stone that fails to pass through a 2½ or 3-inch hole returns by gravity through a chute to a jaw crusher of moderate size. One of the largest labor items in stone crushing is the breaking up of the stone into sizes that will enter the crusher, and another item of importance is the labor of feeding the crusher. By the use of the large gyratory crusher, supplemented by a small jaw crusher, both of these items are greatly reduced. In the method of feeding the gyratory crusher, however, there is a good way and a bad way. Very often the stone is delivered to the crusher platform with dump carts, the platform all around the crusher being perfectly level. Where a level platform is thus used most of the stone has to be lifted by the men in order to feed it into the crusher. Now a man is a very expensive lifting engine, and as a consequence his capacity by this method is not much more than 35 cu. yds. of stone fed into a crusher in ten hours.

Contrasted with this poor way of feeding the stone, is the one always seen in large works where the contractor has used forethought. We mean the use of a large chute lined with sheet iron into which the cars or carts are dumped from a platform. The stone then slides down the chute toward the mouth of the crusher, where men armed with long irons resembling pokers drag each stone into the crusher, never once lifting a single stone. Four men can thus feed a gyratory crusher with little exertion and with at least three times as much stone as where every stone is raised by hand.

Among the little points that add to the effectiveness of a crushing plant, without complicating the machinery, is the use of an endless rubber belt for elevating and conveying the screenings, instead of using a bucket elevator. This we saw in a combined crushing and concrete mixing plant where the stone screenings were conveyed to the sand bin. The volume of screenings is never large, ordinarily about 16% of the total, and a belt running up a slope of 1 in 2½ serves admirably to handle them.

In fact a rubber belt can be used for elevating the large crushed stone as well as the screenings. We have in mind a plant where two jaw crushers feed their product onto a rubber belt that runs between them, rising on a slope of 1 in 2½ to the screen. Side rollers give the belt a curve that holds the stone.

Bins for holding the crushed stone are expensive at best and quite limited in capacity, but the cost of rehandling the stone when stacked in piles generally deters the contractor from having a stock yard for broken stone. Where work is done on a large scale, however, this cost of rehandling may be quite small compared with the gain that results from being able to run a crusher day and night. Thus by using a "dinkey" and a few dump cars the broken stone may be stacked in huge piles, as is now being done by the contractor for the Jerome Park Reservoir, New York city. The cost of moving the stone thus is very slight, but there is still left the cost of loading it into cars again. By using either a clam-shell bucket on a traveling derrick, or by using an ordinary steam shovel, this cost of reloading the stone may be reduced to a very small sum. To shovel it up by hand would be folly, since a laborer will not load much more than 12 cu. yds. of stone a day into wagons, where the stone is shoveled off the ground.

We know of many stone contractors who furnish ballast for railways. During the winter months their crushing plant lies idle, but when spring comes they have a greater demand than they can supply. Would it not be the part of wisdom for such contractors to provide stone stock yards so that their crusher might be kept busy the year around? It would thus be possible for them to double the output of their plant, and while the profit per cubic yard would be somewhat less, the total profit would be far greater than it now is. Of course, one has always to consider the money tied up in the stock yard. Fortunately, however, stone differs from most merchandise; neither moth nor rust will corrupt it, nor will thieves break through and steal, but, best of all, a stone pile will not burn up. For these reasons, and because broken stone has a value not subject to much fluctuation, the contractor will ordinarily not find it difficult to borrow money from the banks on his stock in stone. Figured at the ordinary rates of interest, the cost of thus carrying each cubic yard of stone is slight indeed.

PERSONAL.

Mr. A. L. Humphrey, Superintendent of Motive Power of the Chicago & Alton Ry., has resigned.

Mr. Michael J. Kehoe has been appointed Chief Engineer and Electrician of the Indiana Union Traction Co.'s lines.

Mr. D. F. Crawford has been appointed General Superintendent of Motive Power of the Pennsylvania Lines West of Pittsburg, to take effect Aug. 1.

Mr. George L. Record has resigned as a Director and President of the Consolidated Water Co. of Utica, N. Y., and Mr. John V. Bacot is elected his successor.

Mr. George Stoller, a civil engineer with the Pennsylvania R. R., has been appointed Assistant State Highway Commissioner of Pennsylvania, with headquarters at Harrisburg.

Mr. Edmond Parville, Engineer, sent to this country from Paris, France, by the Credit Lyonnaise to inspect railroad systems, was recently a visitor at Philadelphia, Pa.

Mr. B. H. Fisher, formerly Division Engineer of the S. F. & S. J. V. Division of the Santa Fe Ry., has been appointed Superintendent of the North Shore Ry. of California.

Mr. A. C. Hardison, Assoc. M. Am. Soc. C. E., formerly of Caribou, Me., and a graduate of the University of Maine, class of '90, has opened an office as mining engineer in the Douglas Bldg., Los Angeles, Cal.

Mr. R. A. Hadfield, M. Inst. C. E., of Hadfield's Steel Foundry Co., Sheffield, England, is visiting this country, particularly to investigate American methods in switches, frogs and special work for street railways.

Mr. Nelson J. Welton has resigned as a member of the State Board of Civil Engineers of Connecticut, after having completed 25 years' service with that body. He is succeeded by Mr. Wm. S. Smith, of Waterbury.

Mr. Henry A. Bishop has been elected Vice-President of the Western Maryland and the West Virginia Central & Pittsburg railroad companies. Mr. Bishop was formerly Purchasing Agent of the N. Y., N. H. & H. R. R.

Mr. G. W. Chance, General Manager of the Trans-St. Mary's Traction Co., has resigned from that company to engage in business as a consulting electrical engineer, with office in the Drexel Bldg., Philadelphia, Pa.

Mr. C. E. Lee, Superintendent of the Worcester, Nashua & Portland Division of the Boston & Maine R. R., has been appointed Assistant General Manager of that road, and is succeeded by Mr. W. R. Mooney, Superintendent of the Concord Division. Mr. W. F. Ray, succeeds Mr. Mooney.

Mr. J. A. Weed has been appointed Superintendent of Bridges and Buildings of the Oregon Short Line Ry., succeeding Mr. J. M. Bennett, resigned. Mr. A. H. King succeeds Mr. Weed as Superintendent of Bridges and Buildings of the Montana Division. Both will have headquarters at Pocatello, Idaho.

Major J. F. Case, a well known civil and hydraulic engineer, Portland, Ore., has been appointed Chief Engineer of the Manila, P. I., water-works by Governor Taft. Major Case, for some time previous to his appointment, had been Assistant U. S. Engineer of Harbor Improvements at Manila, P. I.

Mr. H. A. Kingston, General Traffic Manager of the Lehigh Valley R. R., has resigned to engage in other business, and that office is abolished. Mr. J. A. Middleton, Second Vice-President, with office at 26 Cortlandt St., New York, will hereafter be in charge of the company's passenger and freight traffic.

Messrs. Otto Blum and Erich Giese, civil engineers of the Royal Prussian Railways and instructors at the Berlin Technical Academy for Railroad Commission, are now visiting the various large railway centers of this country studying American railway methods, and will return to Europe by way of China, Japan and India.

Mr. A. A. Steel, of the Engineering Co., of America, New York, is now in New Mexico making examinations of mining properties for the company, and will visit and examine other properties in Arizona. He will reach Florence, Ariz., Aug. 1. Mr. Herman A. Keller, of that company, has returned to New York after making examinations for the company in Idaho.

Mr. Horace G. Clark, Superintendent of the Missouri Pacific R. R. Western Division, has succeeded Mr. A. Robertson as Superintendent of the Middle Division of the Wabash R. R. Mr. Clark was at one time General Manager of the Choctaw, Oklahoma & Gulf R. R. Mr. Robertson takes the place of Mr. C. L. Bretz as Manager of the Western Maryland and West Virginia Central.

Mr. F. T. Dolan, heretofore Superintendent of the Colorado Division of the Atchison, Topeka & Santa Fe Ry. at Pueblo, Colo., has resigned to become General Superintendent of the Colorado & Southern Ry., with headquarters at Denver, Colo., succeeding Mr. Frank W. Egan, who becomes Vice-President and General Manager of the Fort Worth & Denver City R. R., with headquarters at Fort Worth, Tex.

OBITUARY

Mr. Thomas O'Toole, bridge builder, of New York, was accidentally killed at Quarryville, Pa., on July 24 while engaged in some railway work on the Pennsylvania R. R. He was directing the lifting of a large stone when a guy rope on the derrick broke and the stone fell, striking him on the head and breaking his neck. He was about 65 years old.

Mr. William Garrett, senior member of the Garrett-Cromwell Engineering Co., of Cleveland, O., died at Mount Clemens, Mich., on July 15. Mr. Garrett was of Scotch parentage and come to this country in 1878 and immediately entered the employ of the Cleveland Rolling Mills Co. From a laborer in the mills he became general manager. Later he invented the Garrett rod mill, and in 1897 the present firm, of which he was the head, was organized.

Mr. F. W. Bond, Chief Engineer of the Fort Smith & Western R. R., died in Fort Smith, Ark., on July 12. Mr. Bond was 52 years of age. He was engaged with the Hayden geographical survey through Colorado and Arizona for the Government in the seventies, and entered the employ of the "Frisco" road as Assistant Engineer in 1881, and in 1889 became its Chief Engineer. From 1892 to 1899 he was Chief Engineer of the Kansas & Texas Coal Co., and the following year became Chief Engineer of the Fort Smith & Western R. R.

Mr. F. J. Kimball, President of the Norfolk & Western R. R. Co., died at his home at Radnor, Pa., July 27, aged 59 years. Mr. Kimball entered railway service in 1862 as a rodman in the engineering department of a branch line of the Pennsylvania R. R. After occupying various railroad positions he was, in 1883, elected President of the N. & W.; when the company reorganized, after leaving the hands of the receiver, in 1896, he was again elected President. As a mark of respect for the dead president every wheel of the entire Norfolk & Western system will be stopped for 10 minutes during the hour of his funeral.

Mr. Luther Stieringer, M. Am. Inst. E. E., died in Pasadena, Cal., on July 17, aged 58 years. He had been stopping in Pasadena since last December, when he was compelled to leave his home in New York city on account of failing health. Mr. Stieringer was well known in the electrical world. He was Consulting Engineer for the General Electric Co. of New York, and carried on a practice as an electrical expert in that city. He was the designer of the electrical display at the Pan-American Exposition. While in California he received the John Scott medal for the most noted achievement in electrical science. He was a member of several technical societies.

ENGINEERING SOCIETIES.

COMING MEETINGS.

AMERICAN FORESTRY ASSOCIATION.
Aug. 25, 26. Summer meeting at the West Hotel, Minneapolis, Minn. H. H. Chapman, 593 Holly Ave., St. Paul, Minn., Local Secretary.

AMERICAN STREET RAILWAY ASSOCIATION.
Sept. 2 to 4. Annual convention at Saratoga Springs, N. Y. Secy., T. C. Penington, 2020 State St., Chicago, Ill.

NATIONAL IRRIGATION ASSOCIATION.
Sept. 15. Annual convention at Ogden, Utah. Secy., J. H. Fowler, Fisher Bldg., Chicago, Ill.

SOCIETY OF CHEMICAL INDUSTRY.—The annual meeting of this society was held at Bradford (England) beginning Wednesday, July 15. Sir W. Ramsay was elected president for the coming year. It was decided to hold the next annual meeting in New York, on the invitation of the New York section of the society.

MILAN EXHIBITION.—An exhibition is being planned to be held at Milan, Italy, in the year 1905, in celebration of the completion of the Simplon tunnel. The King of Italy has consented to act as patron of the exposition. There will be six sections, five of which cover transportation, decorative art and industrial arts, while the sixth is the section of fine arts. This last-named section is restricted to Italy, but the other five are international. Details may be learned by applying to the secretary of the executive committee, Mr. L. Sabbatini, Milan, Italy.

CONSTRUCTION NEWS.

PLANS AND SPECIFICATIONS ON FILE.

The following Plans, Specifications and Bidding Sheets may be seen at the office of The Engineering News Publishing Co., 220 Broadway, New York:

Bids open July	Work.	Place.	Remarks.	See issue July
30	Water Sys...	Ft. Barrancas, Fla...	Sp. & B. Sh....	— 9
30	Buildings....	Ft. Barrancas, Fla...	Spec.....	— 9
30	Paving.....	Shreveport, La.....	Sp. & B. Sh....	—23
*30	W-works....	Warwick, N. Y.....	Sp. & B. Sh....	—16
Aug.				
*1	River imp....	Pittsburg, Pa.	Sp. & B. Sh....	— 9
3	Ferry bdge..	Duluth, Minn.	Sp. & B. Sh....	—16
*3	Sewers.....	Yazoo City, Miss.....	Sp. & B. Sh....	—30
*3	W.& lt.plnt..	Yazoo City, Miss....	Sp. & B. Sh....	—30
*4	Sewerage....	Chelsea, Mass.	Sp. & B. Sh....	—16
5	Road work..	Paoli, Ind.	Sp. & B. Sh....	—30
*5	Sewer sys...	Gainesville, Ga.	Sp. & B. Sh....	—30
5	Fld ranges..	Jeffersonville, Ind....	Sp. & B. Sh....	—23
*5	Buildings....	Ft. Totten, N. Y.....	P., Sp. & B. Sh.	—23
*5	Sewers.....	Corning, N. Y.....	P., Sp. & B. Sh.	—23
*5	Sewers.....	Northfield, Vt.	Sp. & B. Sh....	—23
*10	Paving.....	Newcomerstown, O...	Sp. & B. Sh....	—16
*10	Sewers.....	Newcomerstown, O...	Sp. & B. Sh....	—16
*10	Cmt & stne..	Ft. Greble, R. I.....	Sp. & B. Sh....	—16
10	C.-I. pipe....	New York, N. Y.	Sp. & B. Sh....	—23
*12	Paving.....	Dunkirk, N. Y.....	Sp. & B. Sh....	—30
14	W. supply...	Jefferson Bks, Mo...	P., Sp. & B. Sh.	—23
*15	Water tank..	Washington, D. C...	P., Sp. & B. Sh.	—23
17	W-w. fran...	Tiffin, O.	Ordinance.....	—23
*17	W-works....	Watertown, N. Y. ...	Sp. & B. Sp....	—23
*18	Lock.....	Plaquemine, La.	Sp. & B. Sh....	—23
*18	Buildings....	Johnson City, Tenn..	Sp. & B. Sh....	—30
21	Sewers.....	St. Bernard, O.....	Bid. Sh.....	—23
*21	Harbr imp...	Boston, Mass.	P., Sp. & B. Sh.	—23

*Work advertised in Engineering News.

NOTE.—We are desirous of securing specifications and bidding sheets (and plans when not too bulky) of pending work for file in our New York office for the benefit of contractors or others who may be interested in the work. If more sets than one are sent us we shall be pleased to distribute these to contractors who ask for them. When the work is advertised in Engineering News note that the plans are filed with us will be added to the advertisement without cost.

LIST OF CONTRACTS PENDING.

Bids to be opened.	Work.	Place.	See Eng. News.
July 30.	Paving, Buffalo, N. Y.		July 23
July 30.	Paving, Shreveport, La.		July 23
July 30.	Sewers, Gainesville, Ga.		July 23
July 30.	Filter beds, New York, N. Y.		July 23
July 30.	Bridge, Philadelphia, Pa.		July 23
July 30.	Bridge, Reading, Pa.		July 23
	Advertised, Eng. News, July 16 and 23.		July 16
July 30.	Water-works, Warwick, N. Y.		July 16
	Advertised, Eng. News, July 16 and 23.		
July 30.	Hospital repairs, Fort Strong, Mass.		July 16
July 30.	Valves, etc., Mobile, Ala.		July 9
	Advertised, Eng. News, July 2 to 30.		
July 30.	Riprap stone, Philadelphia, Pa.		July 2
	Advertised, Eng. News, July 2 to 30.		
July 30.	Excavation, Iowa.		July 2
	Advertised, Eng. News, July 2 and 9.		
July 30.	Bridges (8), Columbus, O.		July 9
July 30.	Sewers, Shreveport, La.		July 9
July 30.	Water system, Fort Barrancas, Fla.		July 9
July 30.	Water-works, Wellsville, O.		July 9
July 31.	Building, Waco, Tex.		July 16
July 31.	Paving, Passaic, N. J.		July 16
	Advertised, Eng. News, July 16 to 30.		
July 31.	Bridge, Portage Du Fort, Que.		July 16
July 31.	Water-works, Conrad, Ia.		July 23
July 31.	Sewer, Milwaukee, Wis.		July 30
July 31.	Paving, Salt Lake City, Utah.		July 30
July 31.	Graveling, Newtown, Conn.		July 30
July 31.	Bridge, Salem, Mass.		July 30
Aug. 1.	Buildings (5), Normal, Ill.		July 30
Aug. 1.	Water-works, Lancaster, Ky.		July 23
Aug. 1.	Water-works, Ceylon, Minn.		July 23
Aug. 1.	Bridge, Franklinton, La.		July 16
Aug. 1.	Water-works, Cannook, Mont.		July 16
Aug. 1.	Dam (Misc.), Ohio River.		July 9
	Advertised, Eng. News, July 9 to 30.		
Aug. 3.	Building, Boonville, Ind.		July 2
Aug. 3.	Lock gates (Misc.), Plaquemine, La.		July 9
	Advertised, Eng. News, July 9 to 30.		
Aug. 3.	Bridges (2), Kansas City, Kan.		July 9
	Advertised, Eng. News, July 9 to 30.		
Aug. 3.	Sewers, w.-works, etc., Yazoo City, Miss.		July 16
	Advertised, Engineering News, July 16.		
Aug. 3.	Bridge, Duluth, Minn.		July 16
Aug. 3.	Pier, Plaquemine, La.		July 16
	Advertised, Eng. News, July 16 to 30.		
Aug. 3.	Crushed stone, Charleston, S. C.		July 16
	Advertised, Eng. News, July 16 to 30.		
Aug. 3.	Bridge, Iberville, La.		July 16
	Advertised, Eng. News, July 16 to 30.		
Aug. 3.	School fixings, Hoboken, N. J.		July 16
Aug. 3.	Paving, Ottumwa, Ia.		July 23
Aug. 3.	Sewer, Fairfield, Cal.		July 30
Aug. 3.	Sewer, Elm Grove, W. Va.		July 30
Aug. 3.	Macadamizing, Webster Grove, Mo.		July 30
Aug. 3.	Grading, St. Paul, Minn.		July 30
Aug. 3.	Gravel road (10 mls.), Salem, Ind.		July 30
Aug. 3.	Pumps (w.-w.), Schenectady, N. Y.		July 30
Aug. 3.	Bridge, Otumwa, Ia.		July 30
Aug. 3.	Bridges (10), Brounston, Ind.		July 30
Aug. 3.	Electric light plant, Barnesville, Ga.		July 23
Aug. 3.	Water-works, Parker, S. Dak.		July 30
Aug. 3.	Bridge, Santa Barbara, Cal.		July 30
Aug. 4.	Sewer system, Fort Assinniboine, Mont.		July 30
Aug. 4.	Road (2 miles), Greencastle, Ind.		July 30
Aug. 4.	Brick paving, Ionia, Mich.		July 30
Aug. 4.	Paving, Bloomington, Ind.		July 30
Aug. 4.	Levee work, New Orleans, La.		July 30
Aug. 4.	Bridge, Albany, N. Y.		July 30
Aug. 4.	Bridge work, Dover, Del.		July 30
Aug. 4.	Bridge, New Brunswick, N. J.		July 30
Aug. 4.	Water-works, Milford, O.		July 30
Aug. 4.	Filtering well, Bedford, Ind.		July 30
Aug. 4.	Bridges (6), Peru, Ind.		July 30
Aug. 4.	Building, Fort Preble, Me.		July 23
Aug. 4.	Heating, etc., Washington, D. C.		July 23
Aug. 4.	Sewer, Trenton, N. J.		July 23
Aug. 4.	Steel cables, Woodbury, N. J.		July 23
	Advertised, Engineering News, July 23.		
Aug. 4.	Bridge, Derby, Conn.		July 16
	Advertised, Engineering News, July 16.		
Aug. 4.	Moving cribs, Racine Harbor, Wis.		July 16
	Advertised, Eng. News, July 16 to 30.		
Aug. 4.	Sewer, Chelsea, Mass.		July 16
	Advertised, Engineering News, July 16.		
Aug. 4.	Sewers, Union S. C.		July 2
	Advertised, Eng. News, July 2 and 9.		
Aug. 4.	Water system, Washington, D. C.		July 9
Aug. 5.	Paving, Peekskill, N. Y.		July 16
	Advertised, Engineering News, July 16.		
Aug. 5.	Bridge, Newnan, Ga.		July 16
Aug. 5.	Sewers, Northfield, Vt.		July 23
	Advertised, Eng. News, July 23 and 30.		
Aug. 5.	Sewers, Corning, N. Y.		July 23
	Advertised, Eng. News, July 23 and 30.		
Aug. 5.	Roads, Indianapolis, Ind.		July 23
Aug. 5.	Boat houses, etc., Willets Point, N.Y.		July 23
	Advertised, Eng. News, July 23 and 30.		
Aug. 5.	Vaults (Misc.), Washington, D. C.		July 23
	Advertised, Eng. News, July 23 and 30.		
Aug. 5.	Stand-pipe, etc., Easton, Pa.		July 23
	Advertised, Eng. News, July 23 and 30.		
Aug. 5.	Field ranges, Jefferson, Ind		July 23
Aug. 5.	Riprap, etc., New York, N. Y.		July 30
Aug. 5.	Sewer system, West Baden, Ind.		July 30
Aug. 5.	Pipe sewers, Gainesville, Ga.		July 30
	Advertised, Engineering News, July 30.		
Aug. 5.	Bridge, Arran, Ont.		July 30
Aug. 5.	Bridges (4), Columbia City, Ind.		July 30
Aug. 5.	Roads (27,714 ft.), Paoli, Ind.		July 30
Aug. 6.	Electric light plant, Los Angeles, Cal.		July 30
Aug. 6.	Sewage pumping plant, Kalamazoo, Mich.		July 30
Aug. 6.	Paving, Buffalo, N. Y.		July 30
Aug. 6.	Park entrance, New York, N. Y.		July 30
Aug. 6.	Water-works, Odessa, Wash.		July 30
Aug. 6.	Boats and dredge, New Orleans, La.		July 23
Aug. 6.	Road, Kearny, N. J.		July 16
	Advertised, Eng. News, July 16 to Aug. 6.		
Aug. 6.	Roads, Boston, Mass.		July 9
	Advertised, Eng. News, July 9 to 30.		
Aug. 7.	Sewers, Des Moines, Ia.		July 30
Aug. 7.	Brick paving, Des Moines, Ia.		July 30
Aug. 7.	Road, Albany, N. Y.		July 30
Aug. 7.	Pipe laying, Grand Rapids, Mich.		July 30
	Advertised, Engineering News, July 30.		
Aug. 7.	Water-Works, Naperville, Ill.		July 30
Aug. 8.	Jetties, Asbury Park, N. J.		July 30
	Advertised, Engineering News, July 30.		
Aug. 8.	Paving, Cleveland, O.		July 23
Aug. 8.	Bridge, Wartburg, Tenn.		July 23
Aug. 8.	Bridge, Janesville, Wis.		July 23
Aug. 10.	Building, Fort Slocum, N. Y.		July 16
	Advertised, Eng. News, July 16 to Aug. 6.		
Aug. 10.	Sewers, Newcomerstown, O.		July 16
	Advertised, Eng. News, July 16 and 23.		

Information concerning contracts to be let or of supplies to be furnished, and corrections of errors and omissions in published items, are invited.

Aug. 10. Cement, stone, etc., Fort Greble, R. I. ..... July 16
Advertised, Eng. News, July 16 to Aug. 6.
Aug. 10. Cast-iron pipe, New York, N. Y. ..... July 23
Aug. 10. Bridge, St. Elmo, Va. ..... July 30
Advertised, Eng. News, July 30 and Aug. 6.
Aug. 10. Building, Mishawaka, Ind. ..... July 30
Aug. 10. Paving, Canonsburg, Pa. ..... July 30
Advertised, Engineering News, July 30.
Aug. 10. Ditch, Franklin, Ind. ..... July 30
Aug. 10. Drain, Ethel, Ont. ..... July 30
Aug. 11. Sluice gates, New York, N. Y. ..... July 30
Aug. 11. Electric light plant, Seattle, Wash. ..... July 23
Aug. 11. Building, Indianapolis, Ind. ..... July 30
Aug. 11. Electric elevator, Hartford, Conn. ..... July 30
Advertised, Eng. News, July 30 and Aug. 6.
Aug. 11. Water main, White Hall, Ill. ..... July 30
Aug. 11. Sidewalks, Cincinnati, O. ..... July 23
Aug. 11. Road, Wilmington, Del. ..... July 16
Advertised, Eng. News, July 16 to 30.
Aug. 11. Building, Portland, Ore. ..... July 2
Advertised, Eng. News, July 2 and 9.
Aug. 12. Building, Little Rock, Ark. ..... Jun. 25
Aug. 12. Water-works, Chinook, Mont. ..... July 9
Aug. 12. Bridge, Pekin, Ill. ..... July 16
Advertised, Eng. News, July 16 to Aug. 6.
Aug. 12. U. S. post office, Kirksville, Mo. ..... July 16
Aug. 12. Road, Freehold, N. J. ..... July 23
Advertised, Eng. News, July 23 to Aug. 5.
Aug. 12. Paving, Dunkirk, N. Y. ..... July 23
Advertised, Eng. News, July 23 and 30.
Aug. 12. Building, Kirksville, Mo. ..... July 23
Aug. 12. Building, Danbury, N. C. ..... July 23
Aug. 12. Bridge, Coshocton, O. ..... July 23
Aug. 12. Dredging, Montgomery, Ala. ..... July 30
Advertised, Eng. News, July 30 and Aug. 6.
Aug. 12. Jail building, Fernandina, Fla. ..... July 30
Aug. 12. Roads, Providence, R. I. ..... July 30
Aug. 12. Pipe (Misc. C.), San Francisco, Cal. ..... July 30
Aug. 12. Bridge, Stockton, Kan. ..... July 30
Aug. 13. Engines, generators, etc., Cleveland, O. ..... July 30
Advertised, Engineering News, July 30.
Aug. 14. Water-works improvements, St. Louis, Mo. ..... July 23
Aug. 14. Buildings (2), Merrill, Pa. ..... July 30
Aug. 14. Steam heating, Celina, O. ..... July 30
Aug. 14. Dam, etc., (W.-W.), Winston, N. C. ..... July 30
Advertised, Eng. News, July 30 and Aug. 6.
Aug. 15. Water tower, etc., Washington, D. C. ..... July 30
Advertised, Eng. News, Aug. 6 and 13.
Aug. 15. Sewage plant, Baltimore, Md. ..... July 30
Advertised, Eng. News, July 30 to Aug. 13.
Aug. 15. Roads, Greencastle, Ind. ..... July 30
Aug. 15. Water-works, Cameron, Mo. ..... July 30
Aug. 15. Water tank, Washington, D. C. ..... July 23
Advertised, Eng. News, July 23 and 30.
Aug. 17. Building, Greenville, Tenn. ..... July 23
Aug. 17. Water franchise, Tiffin, O. ..... July 23
Aug. 17. Filters, Watertown, N. Y. ..... July 23
Advertised, Eng. News, July 23 to Aug. 13.
Aug. 17. Levee work, New Orleans, La. ..... July 30
Aug. 17. Paving, 45,993 yds., Sidney, O. ..... July 30
Advertised, Engineering News, July 30.
Aug. 17. Electric light plant, Monroe, La. ..... July 30
Aug. 17. Water filter, etc., Oberlin, O. ..... July 30
Aug. 18. Buildings (2), Johnson City, Tenn. ..... July 30
Advertised, Eng. News, July 30 to Aug. 13.
Aug. 18. Bridge, Binghamton, N. Y. ..... July 30
Advertised, Eng. News, July 30 and Aug. 6.
Aug. 18. Lock approaches, New Orleans, La. ..... July 23
Advertised, Eng. News, July 23 to Aug. 20.
Aug. 19. Heating, Newport, Vt. ..... July 23
Advertised, Eng. News, July 23 and 30.
Aug. 20. Steamboat, New Orleans, La. ..... July 23
Advertised, Eng. News, July 23 to Aug. 20.
Aug. 20. Hydrants, Washington, D. C. ..... July 23
Advertised, Engineering News, July 23.
Aug. 20. Water-Works, Cody, Wyo. ..... July 23
Aug. 20. Building, Bridgeport, Conn. ..... July 30
Aug. 21. Sewers, St. Bernard, O. ..... July 23
Aug. 21. Rock excavation, Boston, Mass. ..... July 23
Advertised, Eng. News, July 23 to Aug. 20.
Aug. 22. Pumping plant, Sioux Falls, S. Dak. ..... July 30
Advertised, Eng. News, July 30 to Aug. 20.
Aug. 22. Dock improvements, New London, Conn. ..... July 30
Aug. 23. Road and walks, Cheyenne, Wyo. ..... July 30
Advertised, Eng. News, July 30 to Aug. 20.
Aug. 25. Water-works, Argentine (Foreign). ..... July 23
Aug. 25. Macadam roads, Newton, N. J. ..... July 30
Advertised, Eng. News, July 30 to Aug. 20.
Aug. 25. Kitchen equipment, Johnson City, Tenn. ..... July 30
Advertised, Eng. News, July 30 to Aug. 27.
Aug. 26. Building, Nashville, Tenn. ..... July 30
Aug. 27. Building, etc., Washington, D. C. ..... July 23
Aug. 29. Sewers, Washington, D. C. ..... July 23
Advertised, Eng. News, July 23 to Aug. 20.
Aug. 31. Steam boilers, Logansport, Ind. ..... July 2
Advertised, Eng. News, July 2 to 23.
Aug. 31. Bridge, Kansas City, Kan. ..... July 30
Advertised, Eng. News, July 30 to Sept. 3.
Sept. 1. Filtering plant, etc., Richmond, Va. ..... July 30
Advertised, Eng. News, July 30 to Aug. 20.
Sept. 4. Sewer, Marion, Ind. ..... July 30
Sept. 10. Paving, Taylorville, Ill. ..... July 23
Dec. 15. Railway, Chili (Foreign) ..... Jun. 11
May 2, '04. Railway, South Australia, ... Feb. 5

RAILWAYS.

ARKANSAS SOUTHERN.—C. H. Sargent, Asst. Engr., was recently at Alexandria, La., arranging for the survey of the air-line between that city and Winnfield. It should be finished in a few days. J. W. Walsh is Gen. Supt., Ruston, La.

ATCHISON, TOPEKA & SANTA FE.—W. B. Storey, Jr., Ch. Engr., has returned to San Francisco, Cal., from an inspection of the surveys of the San Francisco & Northwestern, and states that work will be abandoned during the summer, although the surveys showed a feasible route. The present survey extends along the east side of the Eel River, and another will be made on the west side of that stream and the better route selected from the two.

BALTIMORE & OHIO.—Cenedella Bros., Milford, O., have received a $200,000 contract for relocation of tracks at Ravina, O.——The Pittsburg, Painesville & Fairport Ry., a lessee of this company, has been granted permission to locate its tracks along Waverly Ave., Youngstown, O.

CALIFORNIA.—A plan is talked of to connect San Mateo, Halfmoon Bay and Pescadero by railroad. L. Coburn, Pescadero, is interested. Some surveying has already been done.

CARIBOU, WASHBURN & PERHAM.—S. L. White, Pres., Caribou, Me., writes that a special town meeting was called for July 28 to ask the town of Caribou to subscribe to $25,000 of stock.

CHERRYVALE, OKLAHOMA & TEXAS.—S. M. Porter, Pres., Caney, Kan., informs us that the company now has an accurate survey and definite location, with profiles, for 235 miles of the line, extending from Cherryvale, Kan., through Montgomery county, thence through the Osage Reservation to Geary, Okla., by way of Perry and Kingfisher. Financial matters are not yet completed, but it is expected to begin construction early in the coming fall. It is not decided when contracts will be awarded. J. H. Brewster is Gen. Mgr.; B. J. Dalton, Lawrence, Kan., is Ch. Engr.

CHICAGO & NORTHWESTERN.—Surveys for the connections between Minneapolis, Minn., and St. Paul were made a short time ago. Rockford is on line. E. C. Carter is Ch. Engr., Chicago, Ill.

ILLINOIS CENTRAL.—Company will expend about $100,000 in the Third, Sixth and 15th districts of Shelby County, Tenn., this year, to protect its main line tracks north of Memphis from high water drainage. Three miles of roadbed will be raised from five to eight miles above the present grade. Most of these improvements will be started next month, the engineering work having already been finished. C. E. Millard, Res. Engr., Memphis, is in charge.——Bids were received at Memphis on July 20 for track work at Wolf and Loosahatchie Rivers, involving the removal of 100,000 cu. yds. of earth, and costing about $40,000.——Engineers are establishing a new route for the Yazoo & Mississippi Valley branch around the Anding cut, and work on the new line will probably begin within from 30 to 60 days.——It is reported planned to rebuild all the wooden bridges between Louisville, Ky., and Memphis with steel. This work, with other improvements planned between those points, will cost about $1,000,000. A. S. Baldwin is Prin. Asst. Engr., Chicago.

KANSAS CITY, MEXICO & ORIENT.—The International Construction Co. stockholders met at Austin, Tex., and increased its capital stock from $7,000,000 to $10,000,000. The company is doing the construction work on this road and the increase of capital is to provide for constructing a branch line from San Angelo to Spofford, Tex.

KISKIMINETAS CONNECTING R. R.—The promoters of this road are securing rights of way for building of at least 10 miles of road up Taylor's Run, from Kelly's Station, Pa. The company was chartered to build that line, and also one from Clinton to Kiskiminetas Junction, Pa.

MABOU & GULF.—J. Boardman Cann, Pres., Mabou, C. P., writes that contracts will be let as soon as the arrangements can be made. Surveys completed; all rights of way, subsidies, etc., are secured. Five miles are now in operation and eight miles graded. The projected length is 40 miles. F. R. Page, Mabou, is Ch. Engr.

NORFOLK & WESTERN.—Double track line through Circleville, O., is proposed; rights of way being purchased.——Chief Engineer Churchill says that work is in progress on the branch from Cephas, W. Va., down the Bluestone River about 17 miles. Track has also been laid on the Iager & Southern (Dry Fork branch) from Iager to Ritter, W. Va., 4.9 miles; on the Tug Fork branch, from Welch to Gary, W. Va., 7.34 miles; on the Ivanhoe-Speedwell branch, 6.62 miles. Grading is completed on the Radford & Southern from Radford, Va., to Little River, 2.76 miles. Grading in progress on line from Naugatuck to Kenova, W. Va., about 59 miles, but no track has been laid.

NORTHERN PACIFIC.—Two engineering corps are at work in Pacific County, Wash., one near Kalama and the other near Ilwaso. The second has completed a survey from South Bend to within 20 miles of the Columbia River, near Chinook. This will be for the branch line to tap the branch at South Bend. Actual construction will soon be commenced. W. L. Darling, St. Paul, Minn., is the Engr.

RICHMOND FREDERICKSBURG & POTOMAC.—The Indianola Construction Co., recently incorporated, is to build the projected railway from Dockery, Miss., to Vicksburg. The plans also provide for a line south from Dockery to Vicksburg, and one north to Helena, Ark. It is said that 90% of the cost of grading is already furnished. F. M. Adams is Pres. and P. C. Chapman, Vice-Pres.; F. M. Andrews, Indianola, Tenn., is also interested.

ST. ANDREWS, QUINCY & NORTHERN.—The Florida Legislature granted this company 5,000 acres of land for each mile constructed, limiting the time of completion to four years. Road will start at Quincy and run to the Apalachicola River, thence through Calhoun and Westington counties to St. Andrews Bay, some 77 miles. Company was recently chartered with $200,000 cap.

ST. LOUIS, MO.—T. G. Cagney, Pres. World's Fair Miniature R. R. Co., to whom the concession for operating the road around the grounds of the St. Louis Exposition was let, states that track laying on the miniature road will begin in September. The line will be eight miles long, and, with equipment, will cost $105,000; cap., $200,000.

ST. PAUL & ST. LOUIS.—Surveyors, under John Sanders, Memphis, Mo., are completing a preliminary survey of this proposed road. Road will run from Eldon or Ottumwa, Ia., to Union, Mo.

SOUTHERN PACIFIC.—Surveyors under Engineer Hansen have just run a preliminary survey for a line to connect the Williammette Valley road with the West Side line at St. Joseph, Ore.

TEXAS SHORT LINE.—P. L. McCarthy, C. E., has completed a survey for a line from Grand Saline to Canton, Tex. D. E. Earnest, Grand Saline, is Secy. and Treas.

VARNER, CUMMINS & EASTERN.—J. Bernhardt, Dumas, Ark., writes that a preliminary line is now being located; part of the right of way is secured and capital for construction guaranteed. Contracts will not be let until the survey is completed. The line will be 50 miles long and will run from Linwood via Garretsons to Watson. J. A. Franklin is Pres. and C. P. Rumbaugh, Ch. Engr., both of Little Rock, Ark.

WABASH R. R.—T. M. Strain, Supt. Bridges and Bldgs., Springfield, Ill., while in Quincy, Ill., recently, stated that $12,000 would be spent by the company on new tracks at Fifth and Ohio Sts., that city.

WESTERN MARYLAND.—The contractors for the Cherry Run-Cumberland, Md., extension, connecting the Western Maryland and the West Virginia Central, are the Degnon-McLean Contracting Co., New York, first section, 22 miles; McArthur Bros. Chicago, second section, and Kilpatrick Bros., Chicago, third section. The line will be about 65 miles long, and the second and third sections are of about equal length and of the size of section one.

WINFIELD & SOUTHERN.—Surveys for the line from Winfield to Tulsa, Ind. Ter., have been completed under the supervision of J. W. Beatty, Blackwell, Okla., at a cost of $4,500. Winfield, Kan., is the headquarters.

NEW INCORPORATIONS AND CHARTERS.

CHICKASAW & NORTHEASTERN.—Okla.—Chartered; cap., $5,000,000; will build a line from Chickasaw, Ind. Ter., through Cleveland and Pottawatomie counties, Okla., and the Chickasaw, Seminole and Greek nations, a distance of 125 miles. C. F. Reichart, Asher; W. S. Search, Wanette; J. M. Maxey, Jr., Shawnee, are incorporators.

MENA CITY & HOT SPRINGS.—Ark.—Incorporated to build a road from Mena, Polk county, to Hot Springs, 70 miles. W. A. Carroll, John F. Tod and G. H. Cravens, Mena, Ark., are incorporators.

MEMPHIS & STATE LINE.—Tenn.—Application for charter; cap., $100,000; road will run from a point on the corporate limits of Memphis to the Mississippi-Tennessee state line, about seven miles. The incorporators are stockholders in the Illinois Central.

STREET AND ELECTRIC RAILWAYS.

PRESQUE ISLE, ME.—Arthur Gould is said to be interested in the construction of the electric road from Presque Isle to Washburn. A charter has been granted and $32,000 pledged by the town.

NASHUA, N. Y.—Surveys have been made at Taylor Falls bridge for the connection of the Hudson, Litchfield & Goffs Falls R. R. tracks with those of the Nashua & Lowell. It is intended to equip the line with latest improved cars for high speed.

BOSTON, MASS.—The Middlesex St. Ry. Co. proposes to build and equip a trolley line between Billerica and Arlington Heights and a hearing on that account was held at Burlington. Chas. F. Remington, Woburn, Mass., is a Director.

DARTMOUTH, MASS.—The Horse Neck St. Ry. Co. has been granted franchise in this town.

HARTFORD, CONN.—T. H. McKenzie, Ch. Engr., writes us that capital has been secured for the Wellingford Tramway Co., and that they are now securing right of way through the various towns. The projected length is eight miles and the route is from Wallingford through North Haven to New Haven.

BROOKLYN, N. Y.—The Brooklyn Rapid Transit Co., John C. Breckenridge, Ch. Engr., Montague St., will spend $1,000,000 in improving old Brighton Beach line. An elevated structure will be built from Prospect Park to the Beach, and work is to be begun soon.

KINGSTON, N. Y.—The Newburgh, Highland & Poughkeepsie Traction Co. has been incorporated to build electric road. The capital is $100,000 and Joseph A. Duffy, Thos. G. Hinds and others of Jersey City, N. J., are interested.

NEWBURGH, N. Y.—A hearing will be held in Sept. on application of Intervale Traction Co. for leave to build trolley line from Goshen to Newburgh, via Chester, Greycourt and Washingtonville, at an estimated cost of $400,000.

HEMPSTEAD, N. Y.—The South Shore Traction Co. has asked for a franchise from New York city line at Valley Stream through villages of Lynbrook, Valley Stream, Rockville Center, Baldwin, Freeport, Merrick, Seaford and several smaller places. The New York & Long Island Traction Co. has also asked franchise from Freeport to Massapequa.

SHENANDOAH, PA.—We are informed that right of way of Shenandoah & Suburban Electric Ry. Co. has not all been secured, nor has the capital been obtained, and it has not been decided when contracts will be let. The projected length is six miles and the route is from Shenandoah to Ringtown. D. J. Langton is Pres.

HARRISBURG, PA.—Stated that Perry County St. Ry. Co. is about ready to begin construction of its trolley line between Marysville and Duncannon.

McKEESPORT, PA.—John George, Irwin, Pa., contractor for the new street car line between this city and Irwin has secured right of way through Fawcett property in Versailles to East End, McKeesport.

PITTSBURG, PA.—A syndicate in which Murray A. Verner is interested is said to have perfected a scheme for a traction trunk line to connect Pittsburg with the Mahoning Valley Traction Co. system. Six new connecting street railways have been chartered to close a gap of 21 miles. The new line would form a continuous system from Warren, O., through Youngstown, New Castle, Beaver Falls, Coraopolis and McKees Rocks to Pittsburg.

PITTSBURG, PA.—Surveys have been made and everything is ready to construct roadbed of proposed 28-mile extension of Pittsburg Railways Co. to Jeannette.

PHILADELPHIA, PA.—The legal fight between the P. R. R. and the street railway company which sought to parallel the steam road to Trenton has been settled and construction work has already been commenced. The name of the company is to be the Philadelphia, Bristol & Trenton St. Ry. Co.

WILKINSBURG, PA.—Charter granted to Wilkinsburg, Turtle Creek & East Pittsburg St. Ry. Co., cap., $36,000, to build six miles of road.

WILMINGTON, DEL.—Wilmington City Ry. Co. may extend line to Tods Cut. C. R. Van Trump is Mgr.

CUMBERLAND, MD.—Frostburg & State Line Electric Ry., Light & Power Co. has been incorporated to build trolley line; cap., $120,000. Wm. H. Cole, Cumberland, and George Townsend, Frostburg, are interested.

ROANOKE, VA.—Westinghouse Electric & Mfg. Co., Pittsburg, Pa., have $700,000 contract for construction and equipment of new electric railway from Christiansburg to the U. S. Arsenic Mine Co. Work has been begun.

WELLSBURG, W. VA.—John C. Palmer, Jr., Secy. Buffalo Creek Ry. Co., writes us that application has been made to the county court for a franchise, and to Bethany for right of way on main streets. The road is to be operated by electricity, is to be nine miles long and its route is from Wellsburg, Bethany to Pennsylvania state line. H. G. Lazier is Pres., and M. E. Boyd, Ch. Engr.

HUNTINGTON, W. VA.—A company has been organized to build a street car line from Big Sandy River, near Kenova, to Barboursville, a distance of 18 miles. Senator Stephen B. Elkins and J. L. Caldwell are said to be interested.

SALISBURY, N. C.—Work is to be resumed soon on electric car line from this place to Spencer and the Yedkin River. The road was graded and ties laid some months ago.

BIRMINGHAM, ALA.—Engineers will shortly be in the field for proposed extension of electric railway of Birmingham Railway, Light & Power Co., between this city and Bessemer and Jonesboro.

MEMPHIS, TENN.—Union Belt Ry. Co. has secured right of way for 22 miles of its road. The company has also secured railway access to the Mississippi River. Roach & Mannigan, contractors for part of the road, have already commenced work.

Information concerning contracts to be let or of supplies to be furnished, and corrections of errors and omissions in published items, are invited.

LOUISVILLE, KY.—Louisville & Cincinnati Interurban Co. has been organized with Geo. W. Lewman, Pres., to build a line from Louisville and Jeffersonville to Cincinnati.

TOLEDO, O.—Riggs & Sherman, The Nasby, Toledo, Ch. Engrs. Ohio & Michigan Traction Co., write us that locations for the proposed electric road have been perfected, and the capital secured. Bids will be received about Sept. 1. The projected length is 48 miles and route is to be from Toledo, Petersburg, Dundee, Agalir, Milan and Ann Arbor, Mich. John Clauss, Fremont, O., is Pres.

MANSFIELD, O.—W. J. Pentz, 27 N. Main St., Pres. Mansfield & Eastern Traction Co., writes us that surveys have been completed and right of way for 15 miles secured. The capital is now being obtained and contracts will be let within 30 days. The motive power is electricity and the projected length is 17.84 miles. The route is to be Mansfield, East Mansfield, Mifflin, Steantown and Ashland. B. D. Fellows, Williamson Bldg., Cleveland, O., is Ch. Engr.

MARION, O.—Marion & Findlay Electric Ry. Co. has been incorporated to construct line between Main and Findlay; cap., $10,000; J. W. Scott and R. M. Shute are interested.

CLEVELAND, O.—The Cleveland Electric Ry. Co. is to ask for extensions on four streets, a total of eight miles in all.

KINGSVILLE, O.—Kingsville & Southern Ry. Co. has been incorporated with $20,000 capital, to build road from North Kingsville to South Kingsville. E. F. Pegg and I. F. McAuley are interested.

MARION, IND.—The contract for building the Marion-Wabash Interurban line for the Northern Traction Co. has been let to J. G. White & Co., New York, N. Y.

SHELBYVILLE, IND.—Surveys will be completed in a few days and bids called for constructing an extension of the Indianapolis & Shelbyville Traction Co.'s line to Greensburg.

IONIA, MICH.—The construction of a 35-mile interurban electric line from Ionia to Crystal Lake is projected. The cost is estimated at $230,000. H. B. Slocum, Hubbardston, Mich., is interested.

ROCKFORD, ILL.—The Rockford & Freeport Electric Road has been leased to the Rockford & Interurban Ry. Co. The Oregon, Woodstock & Elgin lines may now be built and the local lines improved. T. M. Ellis is Mgr.

FOND DU LAC, WIS.—Surveys are being made for proposed 27-mile electric railroad from this city to Ripon and Green Lake. C. D. Smith is interested. O. B. Zoern, Sheboygan, Wis., is Engr.

LA CROSSE, WIS.—The promoters of the Sparta-Melrose electric road and the officers of the La Crosse & Black River line are both endeavoring to secure a $15,000 stock subscription.

IOWA CITY, IA.—The Iowa City, Kalona & Washington Ry. Co. may be incorporated to build a trolley between Iowa City and Washington through Kalona. George Rodman, Washington, Ia., is interested.

MT. PLEASANT, IA.—City votes Aug. 3 on granting electric road franchise to J. M. Green, J. O. Ball and Henry Traut.

BUTTE, MONT.—The Butte & Salmon River Electric Ry. Co. has been incorporated with $2,000,000 capital to build 187-mile electric road from this city into Idaho P. B. Moss and H. W. Rowley, Billings, Mont., are interested.

SPRINGFIELD, MO.—G. W. Baumhoff, St. Louis, Mo., is interested in the construction of an electric line between this city and Carthage, at a cost of about $700,000.

BEAUMONT, TEX.—G. A. Noel, of the Beaumont, Port Neches & Port Arthur Electric Ry., states that ample funds have been raised for constructing the road, and that 3,000 tons of steel rails are ordered. About 60 ties are already distributed along the right of way and poles are contracted for.

GALVESTON, TEX.—The Galveston-Houston Suburban Ry. Co. has secured franchise for right of way through Galveston for its proposed electric railway between that city and Houston.

HOUSTON, TEX.—The Houston Electric Co. plans an interurban electric line from here to Harrisburg; also the extension of its system in this city.

FAIRHAVEN, WASH.—E. M. Day, Pres. Whatcom-Skagit Interurban Ry. Co., writes that they are just securing franchises and right of way for proposed 70-mile electric road, the route of which is Fairhaven and Whatcom, Mt. Vernon, via Edison, and also to Deming. D. E. Brown, Whatcom, Wash., is Ch. Engr.

SPOKANE, WASH.—Reported that Spokane Traction Co. will spend $1,000,000 in extending and improving its new street car system.

EUREKA, CAL.—Contract for all overhead work of first section of Eureka Electric Ry., about two miles, let to National Electric Co., San Francisco.

LOS ANGELES, CAL.—Pacific Electric Co. is considering plans for four tracks from city limits on Long Beach division to new interurban depot at 6th and Main Sts.

RED BLUFF, CAL.—Franchise for electric railway granted to Tuscan Mineral Springs Corporation.

SANTA ROSA, CAL.—Bids are asked until Sept. 7 for franchise and privileges to construct and operate steam electric railroad system for Sonoma line, via town by Kelseyville to Lakeport, as applied for by L. H. Boggs. Seafter Mathews, Cy. Clk.

PROVO CITY, UTAH.—Geo. Havercamp, Secy. Utah County Electric Ry. Co., writes us that right of way for proposed road has been secured, a partial survey made and water power determined. The capital for construction has not been obtained and the date for letting contracts is indefinite. The projected length is 61 miles and the route is through Salt Lake, Murray, Bingham Jct., Lehi, Pleasant Grove, Sharon, Provo, Springville, Spanish Fork, Salem, Payson and Santoguin. Reed Smoot, Provo, is Pres. and W. B. Searle is Ch. Engr.

LIGHT, HEAT AND POWER PLANTS.

BURLINGTON, VT.—Mayor James E. Burke writes us that matter of municipal lighting plant is in hands of a committee, J. J. Shea, Chn., and they are expected to take the necessary steps to install an electric light plant, cost of which is not to exceed $150,000. The designing engineer had not been selected.

GREENFIELD, MASS.—Greenfield Electric Light & Power Co. has let contract for concrete dam and 1,200-ft. canal at Gardner Falls. Press reports state that contract for power house at that point had not been let. The cost of the work will be about $50,000. Andrew Doolittle is Supt.

NEEDHAM, MASS.—Town voted July 27 on transferring electric street lighting contract, which expires in October, to Edison Electric Light Co., and also on awarding the new contract to same company.

BINGHAMTON, N. Y.—A. B. Stevens and E. I. White of the Municipal Heating Co., have asked for franchise for laying heating pipes.

DEPOSIT, N. Y.—A. W. Cook, Susquehanna, Pa., is said to be interested in construction of gas works here.

NEW YORK, N. Y.—Reported that New York Central R. R. will build power house and car sheds at Croton-on-the-Hudson.

BERLIN, PA.—Borough may purchase plant of Berlin Electric Light Co. and operate it.

PHILADELPHIA, PA.—Pintsch Gas Co., 160 Broadway, New York, will soon let contract for 2-story brick and steel gas house on 30th St.; complete equipment will be put in.

WYTHEVILLE, VA.—Electric light plant proposed.

BURLINGTON, N. C.—Collier & Brown, American Bldg. Atlantic, Ga., have been making plans and specifications for electric light plant, for which city will issue $18,000 of bonds.

CHARLOTTE, N. C.—The Highland Park Co. will install 2,750-HP. electric plant in connection with their mill being erected in eastern part of city.

BAMBERG, S. C.—City will grant franchise for erection of electric light plant of 15 to 25 arc and 250 to 500 incandescents, franchise to run five, ten or fifteen years. W. P. Riley, Treas.

ROCK HILL, S. C.—W. S. Lee, Jr., Ch. Engr. Catawba Power Co., writes us that they expect to begin the construction of about 29 miles of pole line Sept. 1, and consequently are now in the market for poles, cross-arms, insulators, galvanized braces and bolts.

CONYERS, GA.—Reported that C. E. Reagan wishes to correspond with parties relative to installation of electric light plant and construction of water-works for city.

ROME, GA.—Municipal plant probable.

ST. AUGUSTINE, FLA.—C. F. Hopkins writes us that nothing definite has been decided about proposed electric plant.

BILOXI, MISS.—Biloxi Electric Light Co. will extend its service.

IPSWICH, MISS.—Contract for addition to water station to accommodate electric light plant let to Austin Lord for $2,940.

LAKE CHARLES, LA.—Federal Gas Co., W. H. McGoldrick, Gen. Mgr., Chicago, Ill., is considering installing gas plant in this city.

MONROE, LA.—Bids are asked until Aug. 17 for direct connected engine and alternator, arc light transformers, etc. C. A. Downey, Mayor pro tem.

CLEVELAND, O.—Bids are asked until Aug. 13 for furnishing and installing two direct-connected generator units with switchboard in the engine house of the Kirkland St. Pumping station. W. J. Springborn, Pres. Bd. Pub. Service. (See advertising columns.)

NEWARK, O.—$2,000 may be appropriated for repair of municipal light plant. Steps may be taken to install an incandescent plant to supply outside customers.

ANDERSON, IND.—The following bids were received by Home Heating Co. for installing a plant: American District Steam Heating Co., Chicago, Ill., three bids, $28,000, $38,000, $41,000; Shott & Co., Indianapolis, Ind., $36,000; Mahley & Co., Indianapolis, Ind., outside work, $16,000; boiler house, $10,000. The company may install the plant themselves as they believe it can be done for less than $25,000.

DIXON, ILL.—Franchise for gas, electric light and power plant granted to Henry C. Higgins.

BERWYN, ILL.—Bids are desired for a municipal electric light plant, the plans and specifications for which have been prepared by Chas. Whitney Carman & Co., Cons. Engrs., 88 La Salle St., Chicago.

NORMAL, ILL.—A. E. De Mange has made proposition to council for furnishing street lights.

CAMBRIA, WIS.—Reported that village is asking bids for lighting its streets either by gas or electricity. F. J. Cross is Village Pres.

DELAVAN, WIS.—Contract for duplicate electric light plant at State Home for the Deaf let to Fort Wayne Electric Works, Fort Wayne, Ind., for $2,028.

MARIETTE, WIS.—Plans have been made for the development of power of Sturgeon River at Norway and the Pen Mining Co. will soon start work. The cost is estimated at $500,000.

RED WING, MINN.—A company is to be organized to develop the power at Cannon Falls. Thomas T. Comstock, Kenyon, Minn., will have charge of mechanical operations.

PIERCE, NEB.—Electric lighting agitated.

WACO, TEX.—The Business Men's Club, J. T. Davis., is promoting project for obtaining power from Brazos and Braque Rivers.

SEWARD, NEB.—Mayor J. C. Mulfinger writes us that bids will probably be received in a few weeks for a $10,000 municipal light plant; also for water-works and boilers.

BRENHAM, TEX.—Electric plant. Wm. Perry, Gen. Supt., is to be enlarged and improved.

SEATTLE, WASH.—It is stated that Chas. H. Baker of the Snoqualmie Falls Power Co. will spend about $2,000,000 in putting in a power plant at Stave Lake to develop 20,000 HP.

SPOKANE, WASH.—O. A. Weile is making surveys for proposed electric plant and water-works in new city of Whitefish, Mont.

WALLA WALLA, WASH.—Sale of electric plants of this city and Pendleton, Ore., are being negotiated for; if acquired, it is said, a large power plant will be built.

WESTON, ORE.—J. W. Kimbull, County Surveyor, has been making surveys for proposed electric power station at this place.

COLTON, CAL.—Franchise for gas plant here granted to Geo. B. Ellis and H. W. Allen of Redlands (Cal.) Gas Co.

EUREKA, CAL.—T. H. Minor has asked franchise for pole line between Glendale and Blue Lake for transmission of electricity.

HANFORD, CAL.—Franchise for electric light plant granted to C. E. Baker.

LOS ANGELES, CAL.—Bids are asked until Aug. 6 for electric light plant at Fort Rosencrans, Cal. Maj. J. H. Willard, U. S. Engrs., 518 Bradbury Bldg.

OROVILLE, CAL.—It is probable that the Eureka Power Co. will construct power plant on Big Bend property on North Fork of Feather River.

PASADENA, CAL.—Los Angeles Lighting Co. has purchased Pasadena Consolidated Gas Co., and will, it is said, make many improvements. A. W. Rothe is Local Mgr.

SUISUN CITY, CAL.—J. Keys and J. R. Chadbourne contemplate establishing gas plant; project also to include piping of Vacaville as well as this city.

LOS ANGELES, CAL.—Morgan & Walls, Archs., write us under date of July 21 that bids for construction of electric plant of Pacific Light & Power Co. at Kern River, Cal., were then being received.

STOCKTON, CAL.—Franchise for pole line in city granted to American River Electric Co., Herbert Fleishhacker, Secy.

GRAND VIEW, ARIZ.—Grand Canyon Copper Co. contemplates establishment of power plant at Mooney Falls on Cataract Creek.

PRESCOTT, ARIZ.—Local reports state that C. G. Edwards, Albert Lea, Minn., is interested in a project for the development of electric power from the Colorado River, 25 miles below the Grand Canyon. Surveys show that 23,000 HP. could be developed at a cost of about $1,750,000.

WICKENBURG, ARIZ.—Wickenburg Mining & Smelting Co. have asked franchise for light and water system.

SPANISH FORK, UTAH.—H. C. Jex writes us that very little has been done as yet toward proposed power plant in Spanish Fork Canyon. It is hoped, however, to incorporate the company soon.

WINNIPEG, MAN.—F. A. Cambridge, Cy. Electrician, has estimated the cost of 50 new lamps, new dynamo and extension of pole and wire system, at $9,565.

BONDS.—Seward, Neb., votes $7,000 of bonds for putting in electric light plant.——Burlington, N. C., will issue $18,000 of bonds for installing electric light plant.——Stockton, Cal., may issue $100,000 of bonds for construction of electric light plant. Geo. Wheatly is Cy. Clk.——Sanderville, Ga., will receive bids until Aug. 1 for $22,000 electric light and water bonds.——Biggs, Cal., may issue bonds for electric light plant and water-works.——Merced, Cal., votes Aug. 11 on $81,000 bond issue, $16,000 of which is for electric light system, the remainder for water-works.——Ely, Minn., votes Aug. 4 on $40,000 bond issue for municipal light plant and water-works.——River Rouge, Mich., votes $28,000 of bonds for electric light plant.——Hartford, Ala., will receive bids until Aug. 1 for $15,000 electric light, water-works and general improvement bonds.——Lakeland, Fla., by D. H. Polk, Secy., will receive bids until Sept. 12 for $35,000 electric light, water-works and improvement bonds.

BRIDGES

BOSTON, MASS.—William Jackson, Cy. Engr., writes us that nothing has yet been done toward making working plans or appropriating money for Cottage Farms bridge.

FITCHBURG, MASS.—In our issue of June 25 an item was published stating that the state had authorized the erection of a bridge at Morrison St. and that Wm. C. Elliott was Cy. Engr. We are informed that this was an error, that there is no such street in this city and no such work proposed, and that David A. Hartwell is Cy. Engr., and has been for the past 13 years.

SALEM, MASS.—Wallace Bates writes us that bids are called until July 31 for constructing bridge in town of Danvers. Bridge is to be principally of masonry, on a foundation of piling and granite. It is to be 230 ft. long, 50 ft. wide and is to cost $25,000. Guy W. Ricker, 251 Essex St., Salem, is Des. Engr.

SPRINGFIELD, MASS.—Regarding proposed bridge over Connecticut River, Chas. M. Slocum, Cy. Engr., writes us that only a general map of the locality has been made, to aid in deciding on a site and appropriation. Matter is now in hands of special commission.

FALLS VILLAGE, CONN.—Contract for bridge over Housatonic River let to Berlin Construction Co., for $4,480.

SEYMOUR, CONN.—Town appropriates $6,000 for erecting steel girder bridge on Broad St.

ALBANY, N. Y.—Bids are asked by the Superintendent of Public Works until Aug. 4 for constructing superstructure of bridge over Erie Canal at Seymour St., Tonawanda, N. Y. Chas. S. Boyd, Supt.

AMSTERDAM, N. Y.—F. E. Crane, Cy. Engr., writes us that bids for repairing the river bridge were received July 21 from Oliver Hurst, Fort Hunter, N. Y., $1,790, and from Albaugh & Beckwith, Schenectady, N. Y., $2,280.

BINGHAMTON, N. Y.—Bids are asked until Aug. 18 for erection of superstructure and repairs of substructure of bridge over Susquehanna River at Rockbottom St. S. C. Hull, Cy. Clk.

TONAWANDA, N. Y.—City Engineer Thomas has made plans and specifications for new bridge over Dry River.

WATERTOWN, N. Y.—N. F. Ambursen writes us that contract for steel concrete bridge at Sandy Creek, N. Y., bids for which were received July 10, was not let. The structure will be built by village, under supervision Ambursen & Sayles, Des. Engrs., Watertown. The estimated cost is $3,000.

NEW BRUNSWICK, N. J.—Bids are asked by the Middlesex County Commissioners until Aug. 4 for constructing four-span, plate or latice girder bridge at Milltown. Bridge is to be 155 ft. long, 25 ft. wide, with 5 ft. sidewalks.

PHILADELPHIA, PA.—We are informed that the P. R. R. will not build its proposed stone arch bridge over the Schuylkill River at Zoological Gardens this year. W. H. Brown, Ch. Engr.

DOVER, DEL.—Bids are asked until Aug. 4 for building new stone abutments at Railroad Ave., in Milford, taking down present bridge over Mispillion River at Walnut St. and re-erecting at Railroad Ave.; also for constructing and erecting new buckle plate steel bridge at Walnut St. J. V. McCommons, Clk. of Peace.

WILMINGTON, DEL.—Following bids were received by the Levy Court for erecting bridge over Beaver Run, Brandywine Hundred: Frink & Hazen, Baltimore, Md., $1,878; Isaac S. Talley, $1,194; Elwood Talley, $1,284; John Carr, $2,608; John Hamilton, $1,680.

ST. ELMO, VA.—Bids are asked until Aug. 10 for constructing steel highway bridge over "Four Mile Run," on the Seminary Road. Geo. E. Garrett. (See advertising columns.)

Information concerning contracts to be let or of supplies to be furnished, and corrections of errors and omissions in published items, are invited.

ATLANTA, GA.—Stated that new viaduct is to be erected on Nelson St. R. M. Clayton is Cy. Engr.

MUNFORDVILLE, KY.—$40,000 bridge over Green River at this place agitated.

LOUISVILLE, KY.—The Louisville & Cincinnati Interurban Ry. Co., J. F. McCulloch, Charlestown, Ind., Secy., is said to propose the construction of a bridge over the river at this place and the operation of an electric line between Cincinnati and this city.

CHILLICOTHE, O.—Contracts for Slate Mills bridge have been let as follows: Bridge, Husted Bridge Co., Cleveland, O., $6,450; concrete work, Butler Bros. & Miller, Chillicothe, $2,100; cement, Charles Rutherford.

CLEVELAND, O.—Resolution before council asking for plans for high level bridge over the Cuyahoga River. Wm. Carter is Cy. Engr.——The Erie R. R. will construct overhead bridge at Willson Ave. crossing to eliminate grade crossing at that point.

CLEVELAND, O.—County Surveyor Evers has recommended that 35 wooden bridges should be replaced by iron structures. The estimated cost is $101,000.

BELLAIRE, O.—Proposed to erect bridge over Ohio River, from Grand Hill to North Benwood.

EAST LIVERPOOL, O.—Secretary of War has approved plans of Newell Bridge Co. for bridge over Ohio River.

INDIANAPOLIS, IND.—We are informed that the following bids were received July 18 for constructing steel concrete bridge over Buck Creek; Harry B. Smith, County Auditor: Browder & Fatout, 806 Stevenson Bldg., Indianapolis, $2,935 (contract awarded); A. W. Moore & Co., 225 W. 21st St., Indianapolis, $3,100; Wm. F. Koss, Builders' Exchange, Indianapolis, $2,974.

MARION, IND.—Contract for four arch bridges was let to W. E. Wilcuts for $2,494. Contract for four steel bridges was let to Attica Bridge Co. for $1,456.

PERU, IND.—Bids are asked until Aug. 4 for constructing six concrete arch bridges. C. W. Macy, County Auditor.

TERRE HAUTE, IND.—County commissioners have ordered plans made for the Walters and Lisbon bridges in Pierson township.

BROWNSTOWN, IND.—County commissioners are asking bids until Aug. 3 for constructing ten steel bridges. A. N. Manuel, County Auditor.

COLUMBIA CITY, IND.—Bids are asked by the county commissioners until Aug. 5 for constructing four steel bridges and one concrete and steel culvert.

GREEN CASTLE, IND.—Bids are asked until Aug. 4 for constructing substructures of six bridges. Thos. D. Brookshire, County Comr.

GRAND RAPIDS, MICH.—Erection of viaduct at Bartlett St. under consideration.

EAST TAWAS, MICH.—H. S. Waterman, Ch. Engr., Detroit & Mackinac R. R. Co., writes us that proposed bridge over Cheboygan River, four miles south of Cheboygan, is to consist of one 130-ft. span. The bridge will probably be a deck girder structure built on a foundation of concrete on spiles.

ST. JOSEPH, MICH.—A $50,000 steel bridge is to be built over the St. Joe River at this place.

WEST COOPER, MICH.—Contract for bridge over Kalamazoo River let to American Bridge Co. for $4,500.

SAGINAW, MICH.—The following bids were received July 23 for constructing the Genesee Ave. bridge, itemized bids will be found under Contract Prices: John P. Cowing, Cleveland, O., $143,000; Milwaukee Bridge Co., Milwaukee, Wis., $116,000; King Bridge Co., Cleveland, O., $103,245; Pennsylvania Steel Co., Steeltown, Pa., $127,400; National Bridge Co., New York, N. Y., $104,800; Chicago Bridge & Iron Works, Chicago, Ill., $110,000; American Bridge Co., New York, N. Y., $99,155.

INDUSTRY, ILL.—Contract for 60-ft. steel bridge here let to Springfield Bridge & Iron Co. for $1,140.

ROCK ISLAND, ILL.—City is considering rebuilding of Rock River bridges. Wallace Treichler is Cy. Engr.

LERABLE, ILL.—Contract for bridge at this place has been let to Clinton Bridge Co. for $7,985. Contract for stone work was let to Hobson & Sheldon, Clifton, Ill., for $2,067.

LITTLECHUTE, WIS.—Contract for bridge at this place was let to James P. Garvey, Freedom, Wis., for $9,765.

OTTUMWA, IA.—Bids are asked until Aug. 3 for constructing wooden trestle bridge in Benton St. H. P. Keyhoe, Chn. St. Com.

MINNEAPOLIS, MINN.—Stated that the Wisconsin Central R. R. will construct new bridge over the Mississippi River, from Boom Island to the mainland on the East Side.

INDEPENDENCE, KAN.—Bids are asked by the county commissioners until Aug. 3 for constructing the following bridges: 52-ft. span over Onion Creek, Independence; 45-ft. span over Mouse Creek, Drum Creek; 53-ft. span over Pocket Creek, Sycamore; 52-ft. span over the Guernsey Ditch, Sycamore; 50-ft. span over Fawn Creek, Fawn Creek.

JUNCTION CITY, KAN.—Contract for constructing the Taylor bridge over Smoky Hill River let to Missouri Valley Bridge Co. for $3,000. Contract for constructing Chambers bridge let to Leavenworth Bridge Co. for $1,025. The same company also received contracts for the Mitchell bridge, $1,150; Stillsworth bridge, $1,050, and Rosey bridge, $900.

KANSAS CITY, KAN.—Bids are asked until Aug. 31 for constructing double-deck steel bridge over Kansas River at Central Ave. T. M. Holcomb, County Clk. (See advertising columns.)

KANSAS CITY, KAN.—We are informed that the county commissioners intend to construct bridges over the Kansas River, Kansas City, at Central Ave., Kansas Ave., and 12th St. The 12th St. bridge is to consist of three spans of 200 ft. each, one of 160 ft., and a 240-ft. trestle. The other two bridges are to consist of three spans of 184 ft. each. J. H. Lasley, County Surveyor; J. M. Killner is Chn. County Comrs.

KANSAS CITY, KAN.—Construction of viaduct along Central Ave., from Park Ave. to point east of Kaw River, considered. T. B. Gilbert is Mayor.

STOCKTON, KAN.—Bids are asked until Aug. 12 for building bridge over Solomon River in Richland township. W. F. McNulty, County Clk.

FARGO, N. DAK.—County commissioners have decided to construct new bridges in Hill, Erie, Empire and Stanley townships.

BAY CITY, TEX.—The county has voted to issue $60,000 of bridge and road bonds.

SANTA FE, N. MEX.—Plans for bridge have been made. Plans provide for structure of stone, 67 ft. long with double arch and 30 ft. wide, flooring will be vitrified brick. Arthur Seligman is County Comr.

SPOKANE, WASH.—Spokane Traction Co. announces that it will build bridge over Boone Ave., this city.

ONTARIO, ORE.—Contract for steel bridge over Malheur River let to F. M. Flagler, Council Bluffs, Ia., for $4,285.

LOS ANGELES, CAL.—City has $100,000 for bridges and it is estimated that $40,000 more will be needed. The estimates for bridge works are as follows: Fourth St. bridge, $50,000; Aliso St. bridge, $27,000; Macy St., $10,000; Pasadena Ave., $8,000; Arroyo do los Posos, $5,000. Harry F. Stafford is Cy. Engr.

MARYSVILLE, CAL.—Plans and specifications for new bridge on Hedges grade have been ordered drawn up. W. B. Fitcher is Supervisor.

OROVILLE, CAL.—Board of supervisors will receive bids until Aug. 14 for building steel pony truss bridge over Mud Creek on the Shasta Road.

RIVERSIDE, CAL.—County and city will build new bridge over Santa Ana River to replace the bridge connecting this city with West Riverside. Structure is to be 24 ft. wide and will rest on concrete piers.

SANTA BARBARA, CAL.—Bids are asked until Aug. 3 for constructing bridge over Carpinteria Creek. C. A. Hunt, Clk. County Supervisors.

TORONTO, ONT.—The legislature has ordered the rebuilding of the Glen Road Bridge and Henry Holgate, Montreal, Que., has been appointed Ch. Engr. Cost is not to exceed $20,000.

ARRAN, ONT.—Bids are asked until Aug. 5 for superstructure of steel bridge over Saubie River. The bridge is to have a 99-ft. span from center to center and a 16-ft. roadway. R. McDowall, Owen Sound, Ont., Engr.; J. K. Monkinan, Clk., Box 18, Arkwright, Ont.

BUILDINGS.

PORTSMOUTH, N. H.—Bids are asked until Aug. 1 for erecting new High School building. John Ashton, Arch., 477 Essex St., Lawrence, Mass; Geo. D. Marcy, Mayor.——We are informed that the following bids have been received for erecting storehouse for General Supplies and Building No. 86 at the navy yard: R. L. Fosburgh & Sons, Boston, Mass., $155,000, 10 months; O'Brien & Hoonihan Contracting Co., Syracuse, N. Y., $148,545; The Snare & Triest Co., New York, N. Y., $135,970; J. M. & C. J. Buckley, Worcester, Mass., $162,000; Edward F. Fonder, Philadelphia, Pa., $151,963.

NASHUA, N. H.—Plans are being prepared for the 2-story fireproof post office building; est. cost, $90,000.

BOSTON, MASS.—The following bids have been received for three electric traveling cranes for Steam Engineering Building No. 42, Navy Yard: Northern Engineering Works, Detroit, Mich., $11,700; Manning, Maxwell & Moore, New York, N. Y., $12,846; Whiting Foundry Equipment Co., Harvey, Ill., $11,350; Pawling & Harnischfeger, Milwaukee, Wis., $12,250; Wm. Sellers & Co., Philadelphia, Pa., $17,615; Morgan Engineering Co., Alliance, O., $13,250; Miles-Bement-Pond Co., New York, N. Y., $11,890; Alfred Box Co., Philadelphia, Pa., $12,000; Cleveland Crane & Car Co., Wickliffe, O., $10,800; Alliance Machine Co. Alliance, O., $13,396.

HOLYOKE, MASS.—The new post office building on Main St. will be of granite and limestone, 68 × 92 ft. and will cost about $120,000.

HARTFORD, CONN.—Bids are asked by James Knox Taylor, Supervis. Arch., Treas. Dept., Washington, D. C., until Aug. 11 for installing electric passenger elevator in the post office and court house. (See advertising columns.)

NORWICH CONN.—The Buckley Const. Co., Plattsburg, N. Y., received contract for erecting the 1-story fireproof post office building, 60 × 55 ft., at $75,769.

BRIDGEPORT, CONN.—Bids are asked by James Knox Taylor, Supervis. Arch., Treas. Dept., Washington, D. C., until Aug. 20 for constructing the extension to the post office, including plumbing, heating apparatus, electric wiring, conduits and freight lift.——Plans have been approved for the New York, New Haven & Hartford R. R. Co.'s 2-story brick and stone passenger station, 125 × 233 ft., 240 ft. north of Fairfield Ave. Electric lights and elevators to be installed; est. cost, $300,000. Warren R. Briggs, Arch., 946 Main St.

HARTFORD, CONN.—Plans and specifications have been completed for the 52 × 72 ft. extension to the post office; $250,000 is available.

NEW YORK, N. Y.—Plans have been filed by C. A. Rich, Arch., 35 Nassau St., for 10-story brick school, 37 × 52 ft., at 61-3 East 77th St., for J. W. Finch; $125,000. By G. F. Pelham, Arch., 503 Fifth Ave., for 6-story brick flat, 50 × 87 ft., at 98th St., for Lashowitz & Cohen, 14 West 118th St.; $50,000. By G. F. Pelham, Arch., for 6-story brick flat, with stores, 50 × 87 ft., at 98th St., for Lashowitz & Cohen, 14 West 118th St.; $50,000. By G. F. Pelham, Arch., for 6-story brick flat, with stores, 50 × 100 ft., at Hester and Forsyth Sts., for H. Meyer, 12 Lispenard St.; $60,000. By A. E. Badt, Arch., 1 Union Square, for 6-story brick flat, with store, 42 × 87 ft., at Sixth St., near Avenue C, for S. Rosenberg, 38 Rivington St.; $55,000. By Trowbridge & Livingston, Archs., 424 Fifth Ave., for 6-story brick dwelling, 25 × 64 ft., at 11 East 52d St., for H. T. Proctor, Williamstown, Mass.; $65,000. By Dehli & Howards, Archs., 1193 Broadway, for 10-story brick lofts, with store, 50 × 67 ft., at Greenwich and Fulton Sts., for J. Glackner, 207 West 121st St.; $95,000. By Gillespie & Carrel, Archs., 1123 Broadway, for 9-story brick hotel, 60 × 93 ft., at 306-10 West 51st St., for B. House, 11 West 30th St.; $175,000. By G. F. Pelham, Arch., for 6-story brick flat, 45 × 72 ft., at Bedford and Carmine Sts., for L. J. Max, 302 Broadway; $55,000. By Neville & Bagge, Archs., 217 West 125th St., for 9-story brick flat, 30 × 100 ft., at 65th St. and Central Park West, for the Coburn-Gahren Construction Co., 664 Columbus Ave.; $200,000. By G. F. Pelham, Arch., for two 6-story brick and stone flats, 50 × 87 ft., at 118th St. and Park Ave., for D. Lashkowitz, 14 West 118th St.; $55,000. By Whitfield & King, Archs., 160 Fifth Ave., for 3-story brick Police station, 46 × 75 ft., at 229th St. and White Plains Road; $85,000.

RENSSELAER, N. Y.—New city hall building being discussed. Mayor Lansing interested.

RAY BROOK, N. Y.—Thomas Whalen, Ogdensburg, received contract for erecting two additional wings at the State Hospital for Incipient Tuberculosis, at $75,000.

ATLANTIC CITY, N. J.—Bids are asked for erecting the 1-story fireproof Carnegie Library, 50 × 90 ft.; est. cost, $50,000. R. Ross, Arch., 542 Broadway, New York, N. Y.——A. Hutton, Arch., Stephen Girard Bldg., Philadelphia, Pa., is preparing plans for Leeds & Co.'s 6-story brick hotel. Elevator and steam heating plants to be installed.

TRENTON, N. J.—The State Hospital for Consumptives will be erected. Governor Murphy interested.

GREENSBURG, PA.—Wm. Miller & Sons, Pittsburg, received the contract for erecting the new 5-story fireproof court house, 95 × 166 ft., at $878,000. North Jay granite will be used.

PITTSBURG, PA.—A site has been purchased at Forbes St. and Craft Ave. for the new 18th Regiment armory. An appropriation of $1,000,000 may be made to erect same. Col. Frank I. Rutlidge is interested.——Plans are being considered by the B. & O. Ry. Co., which, if carried out, will mean the erection of a large passenger station in Bellefield, near Duquesne Garden.

MERRILL, PA.—Bids are asked until Aug. 14 for building two lockkeepers' houses, except foundations, at Dam No. 6, Ohio River. Wm. L. Sibert, Capt. Engrs., Beaver.

PHILADELPHIA, PA.—H. B. Shoemaker & Co. received contract for erecting the brick and stone administration building, 53 × 148 ft., for the Belmont filtration plant, at $49,880.——Plans are being prepared for a 3-story brick and steel fireproof storehouse at the Schuylkill Arsenal.——Dornan Bros., 1518 Howard St., will soon award contract for 3-story brick slow-burning storehouse, 60 × 110 ft., at 1518-22 Howard St.——Thompson Bros. received contract to install a steam heating plant in school house in Fourth St., at $3,350.

HIGHLAND, MD.—Contract will soon be let for a 4-story brick warehouse, 80 × 80 ft., for Cecil Distillery Co. C. M. Anderson, Arch., 2515 St. Paul St., Baltimore.

WASHINGTON, D. C.—James Knox Taylor, Supervis. Arch., Treas. Dept., is preparing plans for new 2-story stone and steel fireproof post office; est. cost, $50,000.——Bids will be asked about September for erecting the 5-story fireproof Masonic Temple, 110 × 144 ft., at New York Ave. and K St.; est. cost, $350,000. Wood, Donn & Deming, Archs., 808 17th St.——Plans are being prepared for four 2-story brick slow-burning warehouses, 100 × 150 ft., 75 × 90 ft, 50 × 70 ft. and 75 × 150 ft., for the Barber & Ross Co. Harry Blake, Arch., 614 11th St.——Contract will soon be let for the B. & O. Ry. Co.'s 2 and 1-story buildings, 25 × 100 ft., 50 × 600 ft., 100 × 400 ft. and 300 × 100 ft., at New York and Florida Aves. J. E. Greiner is Ch. Engr., Baltimore, Md.

HAMPTON, VA.—It is stated that S. Collier will erect an office building on North King St.

RICHMOND, VA.—Bids will soon be asked for erecting the Beth Ahaba Synagogue. Noland & Baskerville, Archs., Cham. of Com. Bldg.

PORTSMOUTH, VA.—Bids will soon be asked for erecting a new market house.

PARKERSBURG, VA.—A new Y. M. C. A. building will be erected on Eighth St.

GOLDSBORO, N. C.—A site for the new Goldsboro Hospital has been donated by Thos. W. Swann.

BELMONT, N. C.—A new dormitory and lecture hall will be erected at the Catholic college.

ELIZABETH, N. C.—Bids are asked until Aug. 1 for erecting the new Baptist chapel on Road St. It will be of brick and stone and 50 × 90 ft.

RALEIGH, N. C.—W. P. Rose, Arch., will prepare plans for a graded school building at Haw River.

CHARLESTON, S. C.—Bids are asked until Aug. 1 for erecting the Gibbs Art Institute. F. P. Milburn, Arch., Columbia.

GREENVILLE, S. C.—Railroad Commissioner Wharton has stated that a new depot will be erected.

COLUMBIA, S. C.—The following architects submitted plans and specifications for a new building for the Columbia Female College: C. C. Wilson, Edwards & Walter and J. H. Sams. None accepted; est. cost, $40,000 to $50,000. W. W. Daniel is member Bldg. Com.

EASLEY, S. C.—Avery Carter, Arch., Spartanburg, has prepared plans for the Easley graded school.

ATHENS, GA.—James Knox Taylor, Supervising Arch., Treas. Dept., Washington, D. C., is preparing plans for the 2-story stone and steel fireproof post office and court house.

ATLANTA, GA.—The Fulton Building Co. will erect a 15-story brick, stone and steel office building at Peachtree and Marietta Sts., at cost of about $450,000.——Plans have been completed for the Central of Georgia Ry. Co.'s 1-story brick depot; est. cost, $50,000. Evan P. Howell, Mayor, is interested.

SAVANNAH, GA.—The plans of H. W. Witcover, Arch., for the new 6-story city hall building have been accepted; est. cost, $150,000.

ST. AUGUSTINE, FLA.—The local order of Elks have under consideration plans for a new building.

LAKE CITY, FLA.—A new brick Methodist church is contemplated.

WAUCHULA, FLA.—J. Bruyiere, Arch., Avon Park, will probably prepare plans for Carlton & Carlton's new bank building.

FERNANDINA, FLA.—Bids are asked by the County Commissioners until Aug. 12 for erecting a 2-story brick fireproof jail. Edwin R. Williams, Clk.

LEMON CITY, FLA.—Bids are being received for the erection of a public library.

NORTH BIRMINGHAM, ALA.—The site for the new brick Southside school house is being discussed.

SELMA, ALA.—Bids will probably be opened Aug. 15 for erecting the 4-story building for the Elks, Lodge No. 167. Architect Hopson has prepared working plans.

JENNINGS, LA.—Reports state that the Jennings & Northern Ry Co. is interested in the erection of a union depot.

JACKSON, MISS.—Bids will soon be asked for erecting the new $100,000 hotel for the Jackson Hotel Co.

JOHNSON CITY.—Tenn.—Bids are asked until Aug. 18 for constructing four officers' quarters and one governor's residence for the National Home for Disabled Volunteer Soldiers, 346 Broadway, New York. J. H. Freedlander, Arch., 244 Fifth Ave., New York, N. Y.; Moses Harris, Gen. Treas. (See advertising columns.)

MEMPHIS, TENN.—H. P. Hanson, Secy. United Labor Journal Pub. Co., P. O. Box 101, writes us that the new 4-story brick, stone and iron office and hall building will be 90 × 90 ft. and cost $125,000, including equipment. Chighigola & Hanker, Archs., Scimiter Bldg.

NASHVILLE, TENN.—Bids are asked by James Knox Taylor, Supervising Arch., Treas. Dept., Washington, D. C., until Aug. 26 for constructing the extension to the customs house and post office, except heating apparatus, electric wiring and conduit.——A new court house may be erected. Brown & Brown, Archs., are interested.

MARYSVILLE, KY.—Plans are being prepared for the 2-story fireproof post office.

LOUISVILLE, KY.—Arthur E. Mueller is negotiating for the erection of a 15-story concrete and steel office building on Fourth Ave.——The American Tobacco Co. will erect a 2-story brick, slow-burning warehouse, 315 × 364 ft., at cost of $90,000.

Information concerning contracts to be let or of supplies to be furnished, and corrections of errors and omissions in published items, are invited.

CLEVELAND, O.—Wm. Bradley & Son, 277 Broadway, New York, received contract for erecting the public building, at $1,049,000; granite and sandstone will be used. ——John D. Rockefeller will erect a 12-story building on the site of the Weddell House.

CHILLICOTHE, O.—James Knox Taylor, Supervising Arch., Treas. Dept., Washington, D. C., is preparing plans for the 2-story stone and steel fireproof post office and revenue office; est. cost, $75,000.

CELINA, O.—Bids are asked by the County Commissioners until Aug. 14 for a complete steam heating apparatus. Chas. A. Kloeb, Audtr.

GOSHEN, IND.—Bids will be asked by the board of education for a new blast heating plant; also heating apparatus in three other schools. Approximate cost is $8,000. Frank Kelly, Pres.

CHESTERTON, IND.—Bids are asked until Aug. 1 for constructing a new school building. Louis Green, Trustee Washington Township.

BLOOMINGTON, IND.—Bids are being received by the trustees of Indiana University, for erecting a woman's building, $100,000, and a building to install a heating plant, $20,000. Vonnegut & Bohn, Archs., Indianapolis.

INDIANAPOLIS, IND.—Bids are asked by the Indiana Fair Commission until Aug. 11 for erecting the Indiana Building at St. Louis, Mo. Bids will be confined to Indiana contractors. H. C. Mahurin, Ft. Wayne; A. C. Alexander, Secy., State House.

MISHAWAKA, IND.—Bids are asked until Aug. 10 for erecting the city hall building. Heating, plumbing, electric work, steel and wood furniture and combination gas and electric fixtures to be separate proposals.

RICHMOND, IND.—Minck Brewing Co. has had plans prepared by S. O. Yates, Arch., Grand Hotel Bldg., for a 3-story brick business block; also for improving adjoining property. Bids will soon be asked.

STILLWATER, IND.—Bids will soon be asked for erecting brick and stone school building.

SAGINAW, MICH.—Bids are asked by the board of education until Aug. 5 for erecting the Manual Training School. Wm. T. Cooper, Arch., 309 Hayden St.; W. F. Denfeld, Secy., 125 North Washington Ave.

CORUNNA, MICH.—Geo. Rickman & Sons, Kalamazoo, submitted the lowest bid for erecting the new court house, at $89,750. Appropriation is $75,000. Plans will probably be modified.

CHICAGO, ILL.—The George A. Fuller Co. received the contract for erecting the 10-story brick and terra cotta fireproof McNeill building, at $250,000. Holabird & Roche, Archs., 1618 Monadnock Bldg.——A 3-story addition, 50 × 125 ft., will be erected to the public school at 127-39 Cortland St.; est. cost, $70,000.——Reports state that a 16-story office and mercantile building, 100 × 145 ft., will be built at State and Adams Sts., by Gen. Strong; est. cost, $900,000.——Bids will soon be asked for installing low-pressure modern vacuum heating systems in the county hospital and in the Dunning institutions. William McLaren, Supt. Pub. Service.

NORMAL, ILL.—Bids are asked by the board of trustees of the Soldiers' Orphans' Home until Aug. 1 for constructing five brick and frame cottages, consisting of masonry, carpentry, sheet metal work, lathing and plastering, sewerage and plumbing, electric light wiring, and steam heating. Robt. B. Watson, Supervising Arch., 305 Dearborn St., Chicago.; W. G. Cochran, Pres.

PEORIA, ILL.—Mr. Dechman will erect flats at Main and Flora Aves., to cost upward of $50,000.

SYCAMORE, ILL.—W. J. McAlpine received contract for erecting the new court house, at $137,500 to $148,000.

STILLWATER, MINN.—J. W. Miller, 526 Race, St., St. Paul, received contract for erecting the 2-story stone and steel fireproof post office building, at $42,000.

MINNEAPOLIS, MINN.—Harry W. Jones, Arch., 916 Lumber Exchange, writes us that the Cream of Wheat Co.'s 6-story brick, iron and terra cotta warehouse, 70 × 165 ft., will be partly fireproof and cost $100,000.

FOXHOME, MINN.—Bids are asked by the school board until Aug. 3 for erecting school building and installing heating plant in same. L. A. Lamoreaux, Arch., 1107-9 Lumber Exchange, Minneapolis; H. L. Walkup, Clk.

HUCHINSON, KAN.—$50,000 has been appropriated for the government building to be erected at Sherman and Walnut Sts.

KANSAS CITY, MO.—A permit has been taken out for the new Hedrick school building at 41st and Main Sts. The building will be of brick, two stories high, 107 × 113 ft. and cost $50,000.——Work will begin some time in the fall on the addition to the federal building.

LITTLE ROCK, ARK.—Plans and specifications will be received by board of trustees of the Deaf Mute Institute until Aug. 3 for a brick dormitory for girls; cost not to exceed $45,000. J. H. Page, Secy., Laclede Bldg.

WACO, TEX.—F. S. Stevenson received the contract for erecting the 3-story post office and court house, at $75,000.

BEAUMONT, TEX.—Bids are asked until Aug. 11 for erecting a 3-story brick school building. Thomas Langham, Mayor; Glenn Allen, Arch., Waco.

GALVESTON, TEX.—John Lyons will erect a 3-story business house. S. A. Oliver, Arch.

BAIRD, TEX.—It is stated that A. Cooke may erect a brick business building.

YOAKUM, TEX.—Prof. W. C. Buckman will erect a business college, to be known as the Central Business University.

BICKLETON, WASH.—S. A. Rossier will erect a bank building here.

BLAINE, WASH.—An addition will be built to the school house in Dist. No. 25.

SPOKANE, WASH.—A new $50,000 armory is contemplated. Gen. Jas. A. Drain is interested.

TACOMA, WASH.—The new 2-story brick armory will be 10 × 200 ft. and cost $50,000.

PRINEVILLE, ORE.—J. B. Shipp is preparing plans and specifications for the new high school building.

FRESNO, CAL.—McDougall Bros., Archs., Voornum Bldg., are preparing plans for two more wings for the county hospital.

MONROVIA, CAL.—A new hotel, 400 ft. long, will be built, at cost of about $400,000. John Parkinson, Arch., Los Angeles.

REDWOOD CITY, CAL.—Architects Dodge & Dolliver, Sansome St., San Francisco, are receiving bids for erecting the court house; est. cost, $125,000.

SAN DIEGO, CAL.—Bids are asked by the board of trustees of the State Normal School until Aug. 8 for erecting the west wing of the State Normal School. R. M. Powers, Pres.

RIVERSIDE, CAL.—The Riverside Woman's Club will erect a building.

SAN FRANCISCO, CAL.—Plans have been completed for the 4-story brick and stone Lowell High School building; est. cost, $400,000. City Engineer Grunsky is interested.

SAN FRANCISCO, CAL.—A 3-story brick building will be erected at Annie and Jessie Sts.——A new mission bank will be erected; cap., $200,000. James Ralph, Pres. ——The Riders' Club will erect a 2-story brick building at C St. and Seventh Ave., to cost $50,000. John Gourney is Pres.; Wm. Curlett, Arch., Phelan Bldg.——City Engineer Grunsky has prepared plans for a 2-story public library building, to cost $1,000,000.——Riley & Hock received contract for erecting John Lee's 6-story brick building on Suter St., at $100,000.——The Union League Club contemplates erecting a 7 or 10-story club building. F. H. Corey is Secy.

SAN PEDRO, CAL.—Reports state that the Southern Pacific Ry. Co. will erect a hotel; also a new depot.

STOCKTON, CAL.—Stockton Lodge, No. 218, P. B. O. E., will erect a 5-story building at Weber Ave. and Sutter St.; est. cost, $100,000.

BLACKFOOT, IDA.—John Millick will erect a 2-story brick and rock business block, 50 × 60 ft., at Bridge and Main Sts.

WATER SUPPLY AND IRRIGATION.

BETHLEHEM, N. H.—Town votes to purchase works of Crystal Springs Water Co. for $49,500.

MONTPELIER, VT.—We are informed that no action has been taken by city toward construction of filter, and none will probably be taken at present. P. S. Smith, Supt. W.-W.

ATTLEBORO, MASS.—Town votes to extend water service to Briggs Corner section; est. cost about $20,000. Wm. M. Stone is Comr.

BOSTON, MASS.—Stated that about $2,000,000 will be required within next 10 years to place city water service in good condition. Wm. Jackson is Cy. Engr.

GARDNER, MASS.—Commissioners have decided that town should pay Gardner Water Co. $274,000 for its plant and franchise.

GREAT BARRINGTON, MASS.—East Mountain gravity system may be improved and enlarged and water power pumping plant erected on Green River; matter may be voted on Aug. 7.

WAKEFIELD, MASS.—Town votes to purchase plant of Wakefield Water Co. for $230,000. Chas. A. Dean is on Water Com.

WRENTHAM, MASS.—Surveys are under way for works.

SIMSBURY, CONN.—We are informed that the Village Water Co. has bought pipes, hydrants and gates for new works from M. J. Drummond & Co. Contract for reservoir let to A. J. Ketchum & Son. The contract for pipe laying had not been let; 4½ miles 8-in. and one mile 6-in. pipe are to be put down. T. H. McKenzil, Hartford, Conn., Ch. Engr.

WATERBURY, CONN.—Bids are asked until Aug. 4 for laying about 2,500 ft. 8-in. water main, with gates and hydrants, in Watertown Road. R. A. Cairns, Cy. Engr.

ALFRED, N. Y.—Village works probable.

BUFFALO, N. Y.—Geo. W. Fuller, 170 Broadway, New York, N. Y., will investigate the city water supply.

COHOES, N. Y.—C. C. Vermeule, Consult, Engr., 203 Broadway, New York, has reported on a pure water supply for this city. He estimates the preliminary cost of a 5,000,000-gallon filter plant at $357,458; supply from artesian wells at $400,520, and supply from Alplans Kill at $674,300.

FORESPORT, N. Y.—N. Connors, Clk., writes us that details for proposed municipal works have not been decided; cost is not to exceed $23,000. F. J. Wagner, Foresport, is Des. Engr.

MANNSVILLE, N. Y.—Works voted down.

SCHENECTADY, N. Y.—Bids are asked until Aug. 3 for furnishing two centrifugal turbine electrically driven pumps. H. S. Van Voast, Water Comr., 447 Franklin St.

YONKERS, N. Y.—A. W. Kingsbury, Clk. Water Comrs., writes us that following bids were received July 25, as advertised in Engineering News, for enlarging Grassy Sprain Reservoir: Robert L. Stewart, Yonkers, $84,039; Murphy & McDermott, Summit Place, Utica, N. Y., $82,436; Grady, Kearns & Hart, Yonkers, $65,402; Canepi & Mangini, Yonkers, $61,525; Bellew & Merritt, Tuckahoe, N. Y., $56,812; Murray, Molloy & Berrigan, Yonkers, $56,788 (awarded contract).

EAST ORANGE, N. J.—City will establish 6,500,000-gallon municipal water plant, to cost $15,000.

ELMER, N. J.—Hiram Van Meter, Borough Clk., writes us that Philadelphia parties have asked council for franchise to erect works; no action, however, has been taken as yet; population, 1,300.

RAHWAY, N. J.—The following bids were received July 20 for filtration for city works: W. B. Sealfe, Son & Co., Pittsburg, Pa., $24,759; Pittsburg Filtering Mfg. Co., $26,560; Federal Filtration System, $27,868, air washer included $1,965 extra; New York Continental Jewell Co., $29,350; Pittsburg Filter Co., $26,560; American Water Purifying Co., Indianapolis, Ind., $26,800; Filter Construction Co., of Philadelphia, $37,464, without filter bed, $25,342. Howard B. Bunn, Clk. and Supt. Water Comrs., writes us that action was to be taken on the bids July 24.

BERLIN, PA.—Contract for building works of Berlin Water Co. let to Chandler Bros. & Co., Beaver Falls, Pa., for about $50,000. Supply is to be piped from mountain springs, three miles from city.

DUQUESNE, PA.—Contract for improving water-works in this place and Etna let to Gordon & Hulings, Pittsburg, and Sandberg & Shaw, Duquesne.

HOMESTEAD, PA.—Council will consider metering of city supply.

NAZARETH, PA.—Contract for 800,000-gallon reservoir for Nazareth Water Co., near Morristown road, let to Miles-Fehr Co., Easton, Pa.

MILLVILLE, PA.—H. S. Frederick, Contractor, Millersburg, Pa., wants to buy about Aug. 15, for delivery Sept. 1 to 15, pipe, hydrants, valves, specials, lead, jute, cement, etc., for building gravity system of works for the Middleburg Water Co.

PHILADELPHIA, PA.—Contract for erecting administration building at Belmont filter plant was let to H. B. Shoemaker & Co., for $49,890.

SAYRE, PA.—W. H. Goodwin, Gen. Mgr. Sayre Water Co., writes us that plans for extension of plant are being prepared by T. W. Ledoux, 112 N. Broad St., Philadelphia, to whom all inquiries should be addressed.

SCRANTON, PA.—Regarding proposed purchase of local water and gas plants, Mayor Alex. T. Connell writes us that no steps whatever have been taken yet to get figures from the gas and water companies. The matter is to be placed entirely in hands of the council.

WILMINGTON, DEL.—J. A. Bond, Ch. Engr., Water Comn., writes us that plans and specifications for proposed new city water-works are about ready, and bids may be asked soon.

WASHINGTON, D. C.—The time for receiving bids for constructing water tower and lodge at Fort Reno, D. C., has been extended from Aug. 8 to Aug. 15, as stated in our advertising columns. Henry B. F. Macfarland, District Comr.

WASHINGTON, D. C.—The General Land Office Commissioner has directed the withdrawal from entry of 368,000 acres public land in Arizona, in connection with the Salt River irrigation project, and 460,000 acres in South Dakota, in connection with the Belle Fourche project. The withdrawal of 160,000 acres in Roswell, N. Mex., district for addition to Lincoln Forest reserve was also directed.

BRISTOL, VA.—The contract for new city reservoir let to Caldwell & Jackson for about $12,000.

LYNCHBURG, VA.—Sweet Briar Institute will have lake and reservoir of 40,000,000 gallons, besides making various other improvements, involving the expenditure of $100,000.

RICHMOND, VA.—Bids are asked until Sept. 1 for constructing subsiding and coagulating basins and work pertaining thereto; approximate estimate of work to be done, $300,000. Chas. E. Bolling, Supt. W.-W. (See advertising columns.)

PARKERSBURG, W. VA.—We are informed that city is considering adoption of plan for water purification. John V. Dunbar is Cy. Engr.

WINSTON, N. C.—Bids are asked until Aug. 14 for constructing rubble masonry and earth embankment dams, containing about 1,100 cu. yds. masonry and 4,000 cu. yds. packed embankment, for clear water basin, requiring about 7,000 cu. yds. packed embankment and 9,000 sq. yds. 6-in. concrete; also for trenching for and laying 9,000 ft. each of 12-in. and 10-in. water main, and for constructing 25 × 75-ft. stand-pipe. Robt. P. Henry, Cy. Engr.; Jas. K. Norfleet, Chn. Com. (See advertising columns.)

VICKSBURG, MISS.—Citizens' Water-Works Co. has been formed; supply to be obtained from artesian wells. B. W. Griffith is interested.

VIDALIA, LA.—Works and electric plant probable. E. P. Campbell is Mayor.

HAWESVILLE, KY.—Municipal works discussed.

BELLEFONTAINE, O.—State Board Public Works will improve Lewistown Reservoir, now a state park, by building retaining wall and removal of stumps.

CINCINNATI, O.—Village of Cheviot has asked that city extend its mains to that place.

MILFORD, O.—Bids are asked until Aug. 4 for furnishing a station building, tubular steam boiler, compound duplex steam pump, c.-i. water pipes, gate valves, hydrants, stand-pipe, etc.; also for laying pipe and setting valves and hydrants. H. C. Babbitt, Engr.; N. A. Scott, Secy.

OBERLIN, O.—Bids are asked until Aug. 17 for addition to pumping station building, for cleaning and paving small reservoir, building partition therein and covering pump well; also for a filter in the necessary valves and connections. W. B. Gerrish, Engr.; A. A. Wright, Pres. Bd. Pub. Affairs.

BEDFORD, IND.—G. C. Houston, Cy. Engr., writes us that bids will be opened Aug. 4 for constructing filtering well at city water-works pumping station on White River.

FRANKFORD, IND.—Franchise of local water company expires in 1906 and council is now considering the matter.

MUNCIE, IND.—Ernest Jones has made proposition to Normal City Commercial Club, looking to the furnishing of water and light for that suburb.

ORLEANS, IND.—Municipal works discussed.

WASHINGTON, IND.—City has served notice on Washington Water Co. that unless its system is improved and better water supplied, steps would be taken for the annulment of its franchise.

GRAND RAPIDS, MICH.—Bids are asked until Aug. 7 for laying about 22,450—4 to 24-in. pipe, as described in our advertising columns. L. W. Anderson, Cy. Engr.; James Keegan, Pres.

REED CITY, MICH.—Contract for a compound duplex steam pump, 1,500,000 gallons capacity, let to Gardner Governor Co., Quincy, Ill.; contract for 125-HP. internal feed Scotch boiler, let to James McGregor, Cheboygan, Wis.

CRETE, ILL.—Municipal works to be built.

MEREDOSIA, ILL.—Works discussed.

EAST PEORIA, ILL.—Village will install works. P. O., Peoria.

NAPERVILLE, ILL.—We are informed that bids are asked until Aug. 7 for artesian well, a 100,000-gallon surface reservoir, elevated water tower, with 100,000-gallon tank. Power is to be furnished by city electric light plant. Bids for pipe system to be called about Oct. 1. System will consist of about 10 miles 6-in. to 12-in. pipe, 113 hydrants and 60 valves. W. S. Shields, 1715 Marquette Bldg., Chicago, is Des. Engr.

WHITE HALL, ILL.—Bids are asked until Aug. 11 for constructing 4-in. water main in Worcester St. Mayor F. M. Baldwin.

BARABOO, WIS.—W. G. Kirchoffer, Cy. Engr., writes us that nothing definite has been done regarding the installation of new works. When anything is to be done the work will be advertised.

EAU CLAIRE, WIS.—We are informed that the only uncompleted work for improvement of water-works is the building of a 60-ft. × 200-ft. × 12-ft. reservoir. W. H. Willard is Supt.

GRAFTON, WIS.—Jacob Cloos, Milwaukee, Wis., is making plans and specifications for a combination system of air compression and direct pumping water-works for this place.

WEST ALLIS, WIS.—Works agitated.

DES MOINES, IA.—Local water-works company has offered to lay mains through the Broadway tract, if the owners, the Briggs Real Estate Co., will advance the $15,000 necessary for the work.

LAKE NEBAGEMAIN, MINN.—Works petitioned for.

ELY, MINN.—City votes Aug. 4 on $40,000 water and light plant.

Information concerning contracts to be let or of supplies to be furnished, and corrections of errors and omissions in published items, are invited.

PARKER, S. DAK.—Mayor H. C. Pfeiffer writes us that bids will be received by the city council until Aug. 3 for constructing system of water-works. W. D. Lovell, Minneapolis, Minn., is Des. Engr.

SIOUX FALLS, S. DAK.—Bids are asked until Aug. 22 for furnishing and installing municipal water-works pumping plant, consisting of 3,000,000-gallon high-duty pumping engine, 3,000,000-gallon compound duplex pump, three 66-in. x 16-ft. boilers and appurtenances, as stated in our advertising columns. D. Loweth & Wolff, First National Bank Bldg., St. Paul, Minn.; W. R. Marshall, Secy. Plans and specifications are on file and blank proposals may be obtained at office Engineering News, Monadnock Bldg., Chicago, Ill.

CUMBERLAND, WYO.—Contract for excavation work for installation of works here let to Corey Bros. Construction Co., Ogden, Utah.

CAMERON, MO.—Bids are reported asked by the city council until Aug. 15 for constructing $59,000 water-works.

LONGVIEW, TEX.—We are informed that bids will not be called for some time for water-works and sewers for this place. Williamson & White, 702 Fuller Bldg., New York, N. Y., Engrs.

PERRY, OKLA. T.—City has purchased local works for $25,000.

DAVENPORT, WASH.—Contract for extending local works let to V. Schroeder. Extension will consist of about one mile of wood pipe.

FORT CASEY, WASH.—Plans for works to cost $100,000 for this post are being made. Supply is to be from springs and will be forced by compressed air a distance of 6½ miles.

ODESSA, WASH.—F. J. Hoagland, Town Clk., writes us that bids are asked until Aug. 6 for constructing water-works. J. W. Strack, Des. Engr., Spokane, Wash.; Geo. A. Kennedy, Mayor.

SEATTLE, WASH.—Council has passed resolutions providing for water main in 2d Ave. to cost $7,900, and water main in Hillman Pl., to cost $3,600.

DALLAS, ORE.—Mayor J. C. Hayter writes us that contract for works let to H. V. Gates, Hillsboro, Ore., who is to operate plant and receive revenue from private customers.

RAINIER, ORE.—Franchise for works and electric lights granted to D. H. Welch, Astoria, Ore.

LOS ANGELES, CAL.—The Park Board will recommend the improvement of the various park water systems.

MARYSVILLE, CAL.—Works discussed.

REDLANDS, CAL.—J. B. Glover writes us that steps have been taken to form a new company of water users of this city. H. H. Garston is Pres. of the new organization.

REDWOOD CITY, CAL.—Contract for furnishing supply pipes and placing same in position for Redwood City Water Co. has been let to R. C. Holmquist.

OCEANSIDE, CAL.—Contract rock reservoir for city let to W. H. Simmons for $1,493.

SAN BERNARDINO, CAL.—City will have $300,000 system of works.

SACKVILLE, N. B.—Town votes July 31 on purchase of works of Sackville Water Co.

WINNIPEG, MAN.—City engineer has recommended two additional filters and 50 more hydrants for city water-works.

BONDS.—Attleboro, Mass., will issue $20,000 water main extension bonds.——Wakefield, Mass., will issue $230,000 of bonds for purchasing of water-works.——We are informed that Shellsburg, Ia., votes Aug. 4 on water-works tax. Dell G. Fales, Cy. Clk., has charge.——St. Louis, Que., will issue $42,820 debentures for extending water service.——Monroe, Ga., votes Aug. 6 on bond issue for establishing water-works.——Anthon, Ia., authorized issue of $4,500 water-works bonds.——Minneapolis, Minn., Joshua Rogers, Cy. Comptroller, will receive bids until Aug. 10 for $100,000 water-works bonds, $50,000 bridge bonds, $75,000 street improvement bonds and $175,000 permanent improvement bonds. C. S. Hulbert is Cy. Treas.——Havre, Mont., G. T. Sanderson, Cy. Clk., will receive bids until Aug. 24 for $26,500 water and sewer bonds.——Gulfport, Miss., J. I. Ballenger, Mayor, will receive bids until Aug. 4 for $40,000 water bonds.——Tupelo, Miss., W. D. Anderson, Mayor, will receive bids until Aug. 15 for $60,000 water and sewer bonds.——Thermopolis, Wyo., Ira E. Jones, Mayor, is said to ask for bids until Aug. 3 for $30,000 water bonds.——The Dalles, Ore., T. J. Seufest, Pres. Water Comrs., writes us that city votes $50,000 bond issue for extending water works.——Mt. Vernon, S. Dak., M. J. Doughty, Town Clk., is stated to be asking for bids Aug. 1 for $5,000 water bonds.——Cameron, Mo., O. M. Young, Mayor, will receive bids until July 31 for $59,000 of water bonds.——Fort Collins, Colo., T. H. Garrett, Cy. Clk., will receive bids until Aug. 3 for $175,000 water bonds.——Sulphur Springs, Tex., has issued $1,900 water-works bonds.——Townsend, Mont., E. H. Goodman, Cy. Clk., writes that proposed water-works bond issue was defeated—Merced, Cal., votes Aug. 11 on $65,000 bond issue for water-works.

NEW COMPANIES.—Pine Valley Irrigation Co., Salt Lake City, Utah; $6,500; Peter Snow, Reuben Gardner, W. J. Snow.——Mill Valley Water Co., Mill Valley, Cal.; $100,000; Wm. A. Magee, Sidney B. Cushing.——Fresh Water Irrigation Co., Lake Charles, La.; to build canal from Phillips bluff on Calcasieu River.

SEWERAGE.

CLAREMONT, N. H.—Surveys have been completed for the new sewer system.

LEOMINSTER, MASS.—A. L. Whitney, Chn. Sewer Com., writes us that nothing has been done toward the construction of a sewer system, except to prepare plans.

SPRINGFIELD, MASS.—M. D. Patterson, Cy. Engr., has nearly completed plans and surveys for the extension of the trunk line sewer. The extension will be about 5,800 ft. long.

SWAMPSCOTT, MASS.—Sewers will be constructed at an expenditure of $35,000. Sewer Commissioner Bunting can give information.

PHOENIX, R. I.—E. W. Shreld, Engr., estimates the cost of constructing a water drain along Allen St. at $8,000, exclusive of land damages and the cost of removing lodge.

MANCHESTER, CONN.—T. H. McKenzie, Consulting Engr., writes us that he is making surveys for the proposed sewer system at the north end. A disposal plant will also be built.

NEW HAVEN, CONN.—T. F. Maher received contract for constructing the sewer in Harriet St., at $1,264.

ALBANY, N. Y.—John Doyle received contract for constructing a sewer in Bertha St. at $1,486; also for improving Schuyler St., at $9,270.

MATTEAWAN, N. Y.—E. D. Smalley, Supervising Engr., writes us that bids will probably be asked about Aug. 1 for constructing sewer system, est. cost., $125,000. L. F. Stanbrough, Pres. Bd.

OSWEGO, N. Y.—Five new sewers will be constructed.

NEW YORK, N. Y.—A sewer system will be constructed in Woodlawn Heights; est. cost, $120,000.

WOODSTOWN, N. J.—Sewer system being discussed.

PHILADELPHIA, PA.—It is stated that the entire system will be reconstructed. Peter E. Costello is Dir. Pub. Works.

PITTSBURG, PA.—An ordinance providing for the construction of a sewer in Sweetbriar St. has been approved. H. B. Davis is Clk. Council.

BALTIMORE, MD.—Bids are asked, with plans, by the West Arling Improvement Co., 211 Union Trust Bldg., until Aug. 15 for installing a sewerage plant to provide for 600 people. Henry F. New, Treas. (See advertising columns.)

WASHINGTON, D. C.—D. E. McComb, Supt. of Sewers, writes us that the following bids have been received for furnishing 5-ft. D c-i. pipe and specials for sewerage pumping station: Camden Iron Works, 400 Chestnut St., Philadelphia, Pa., $15,940; U. S. Cast Iron & Foundry Co., Land Title Bldg., Philadelphia, Pa., $14,260; Dimnick Pipe Co., Birmingham, Ala., $8,122.

NORFOLK, VA.—Sewerage system for the public schools being discussed; est. cost, $4,500.

ELM GROVE, W. VA.—Bids are asked until Aug. 3 for constructing about 1,625 ft. 10—15-in. sewers. J. E. Raab, Recorder.

DECATUR, GA.—Local papers state that a sewer system will be constructed.

GAINESVILLE, GA.—Bids are asked until Aug. 5 for constructing about four miles of pipe sewers. P. M. Parker is Mayor.

LOUISVILLE, KY.—The question of constructing sewers before streets are paved is being discussed.

ELIZABETHTOWN, KY.—C. R. Parsons, Civil Engr., Louisville, has completed survey for sewers.

LEXINGTON, KY.—A sewer will be constructed in Maxwell St.

PADUCAH, KY.—The sewer system may be extended.

MASSILLON, O.—Neidlinger & Kraft and Scott & Jordy have submitted bids for constructing a sanitary sewer in South Mill St.

CLEVELAND, O.—We are informed that the letting of the contract for constructing a sewer in Reynolds St. has been called off and will be advertised some time in the future.

XENIA, O.—The board of public service has recommended the completion of the sewer system. G. A. McKay is Cy. Engr.

SPRINGFIELD, O.—Lagonda Ave. people are discussing the sewer question.

LORAIN, O.—The following bids have been received for constructing sewer in Sixth Ave.: Geo. Penney, $10,886; Baldwin Bros. & Graham, $11,085; Faragher & Randall, $9,224; George Little, $12,020; Townsend Co., $9,410.

ALLIANCE, O.—The question of providing a proper sewage disposal plant for the Fairmount Children's Home is being discussed. Commissioners Summer and Hay interested.

CINCINNATI, O.—Chief Engineer Stanley's estimate of the cost of constructing sewers in Colerain Ave. and Harriet St. is $18,272 and $3,697, respectively.

TERRE HAUTE, IND.—The following bids have been received by the board of public works for constructing 590 ft. of sewer: Jesse Robertson, $973; J. E. Voorhees & Son, $1,064; Roberts & Co., $1,160.

WEST BADEN, IND.—Bids are asked by the board of trustees until Aug. 5 for constructing sewer system, said system to be of 15—24-in. pipe. I. L. Grigsby, Town Clk.

MARION, IND.—Bids are asked until Sept. 4 for constructing a sanitary sewer. C. G. Robbins, Cy. Clk.

HUNTINGTON, IND.—A sewer has been ordered constructed in Henry St. Bids will soon be asked.

RICHMOND, IND.—The board of trustees of the Eastern Indian Hospital for the Insane have accepted the plans drawn by Prof. R. L. Sackett, Eastham College, for the sewer system. A bacterial or septic method of purification is provided; $15,000 appropriated.

VINITA, IND. T.—We have been informed that Burns & McDonnell, Engrs., Kansas City, Mo., will prepare plans and specifications for water-works and sewers.

KALAMAZOO, MICH.—Geo. S. Pierson, Civil Engr., writes us that bids are asked until Aug. 6 for constructing a sewerage pumping and purification plant. The work includes centrifugal pumps, electric motors, about 1,100 cu. yds. of concrete steel construction, automatically operated beds, etc.

CARO, MICH.—Sewer system talked of.

LANSING, MICH.—City Engineer Collar's estimate of the cost of constructing sewers in five streets is $8,393; est. distance, 2,700 ft.

LINCOLN, ILL.—Robt. M. Berry, Cy. Clk., writes us that bids will be received about Sept. 1 for constructing about 2,140 ft. of 12—18-in. sewer, with average cut of 8 ft.; est. cost, $2,600.

CENTRALIA, ILL.—A sanitary sewer system will be constructed at cost of $50,000.

MILWAUKEE, WIS.—Bids are asked by the board of public works until July 31 for constructing sewer. Chas. J. Poetsch, Comr.

CRESTON, IA.—Bids are asked until Aug. 3 for constructing sewer in and along alley between lots 2 and 11 in block 2. J. C. Sullivan, Mayor. W. H. Robr, Cy. Clk.

FORT DES MOINES, IA.—The Municipal Const. Co. received contract for constructing the sewer system at $20,670.

CHEROKEE, IA.—Bids are asked until Aug. 1 for constructing about 3,110 ft. of 8—12-in. pipe sewer, two automatic syphon flush tanks, manholes, lampholes, etc. D. W. McNeal, Cy. Clk.

EMMETSBURG, IA.—Contract has been let to a Des Moines firm for constructing the sewer system, at $24,752.

OTTUMWA, IA.—Petition presented for a sewer in North McLean St.

DES MOINES, IA.—Bids are asked by the board public works until Aug. 7 for constructing 12—18-in. pipe sewers. B. O. Hanger, W. W. Wise, Bd. Pub. Wks.

FORT ASSINNIBOINE, MONT.—Bids are asked until Aug. 4 for constructing a sewer system. Geo. E. Pond, C. Q. M.

KANSAS CITY, MO.—City Engineer Pike estimates the cost of permanently improving the sewer in Henning St. at $25,000.

SEATTLE, WASH.—Sewers will be constructed in 26th and 29th Aves. at cost of $3,500 and $3,950 respectively.

PORTLAND, ORE.—Sewers will be constructed in East Couch, 9th, East 37th and Lawrence Sts. and Missouri Ave.

PASADENA, CAL.—Herman Dyer, Cy. Clk., writes us that S. J. Edwards received contract for sewer in Waverly Drive, at $1,225. T. D. Allin is Cy. Engr.

SACRAMENTO, CAL.—A new sewer system being discussed.

LONG BEACH, CAL.—The following bids have been received for constructing section 2 of the outfall sewer: J. F. Hall, $17,000; S. M. Quimpy, $13,640.

FAIRFIELD, CAL.—Bids are asked until Aug. 3 for constructing sewer. G. G. Halliday, Clk.

VANCOUVER, B. C.—Thos. H. Tracy, Cy. Engr., writes us that $350,000 will be raised for sewerage purposes.

BONDS.—Selma, Cal., will vote upon issuing $23,000 sewer bonds.——Ford, Mich., may issue $10,000 for sewer system.——A vote will be taken Sept. 20 upon issuing $80,000.——Bids are asked by Bowling Green, O., until Aug. 17 for the purchase of $2,500 sewer bonds. A. Williamson, Clk.——Demopolis, Tenn., will issue $25,000 sewer bonds.——Bonds will be issued by Berwick, Pa., $40,000 of which will be for sewer system.

GARBAGE DISPOSAL—STREET CLEANING

BOSTON, MASS.—The New England Sanitary Product Co., Francis M. Edwards, Secy., has been ordered by the city to transfer its garbage plant from Calf Pasture to Spectacle Island.

BUFFALO, N. Y.—The council has made a report recommending that a contract be given the Buffalo Sanitary Co., 306 D. S. Morgan Bldg., Buffalo, for collecting and disposing of ashes, garbage and refuse for the next five years, such contract to be in force only until such time as city provides necessary destructors, not to exceed three in number. The Buffalo Sanitary Co. will also have contract for building utilization plant to destroy refuse and furnish power for city pumping station.

NEW YORK, N. Y.—Produce dealers of West Washington Market are opposing erection of public dump for street cleaning department at foot of Broomfield St.

NATCHEZ, MISS.—Garbage disposal question is before council.

TOLEDO, O.—The Toledo Development Co. has contract for disposing of city garbage for ten years, and will erect a 100 x 260-ft. garbage reduction plant on Swan Creek. City is to collect and deliver the garbage and offal.

ELWOOD, IND.—City may install $4,500 garbage system, although there is talk of issuing $35,000 of bonds for putting in garbage reduction plant.

GRAND RAPIDS, MICH.—Contract for collecting and disposing of garbage, refuse and dead animals for a 3½-year period has been let to Edgar S. Keifer.

CHICAGO, ILL.—A council committee, Walter J. Raymer, Chn., is to study methods of garbage disposal.

PUEBLO, COLO.—Garbage disposal question under consideration. C. F. Taylor is Cy. Physician.

OAKLAND, CAL.—Pacific Incinerating Co., A. S. Lilley, Pres., has offered to turn over its plant to city at once.

STREETS AND ROADS.

PORTSMOUTH, N. H.—The state boulevard will be relocated. It will run around Rye Harbor, circling the woods and coming out at Straw's Point.

HOLYOKE, MASS.—The paving of Main St. is being discussed.

PROVIDENCE, R. I.—Bids are asked by the State Board of Public Roads until Aug. 12 for constructing about 26,000 ft. of state highway. J. H. Edwards, State Bd. Pub. Roads.

BRIDGEPORT, CONN.—Brick paving discussed.

COLCHESTER, CONN.—Bids are asked until July 30 for grading and constructing road. Wm. P. Adams, Selectman.

NEWTOWN, CONN.—Bids are asked by the board of selectmen until July 31 for graveling a section of road. L. C. Morris, Selectman.

WESTHAVEN, CONN.—Campbell Ave. is to be macadamized from Elm to Main St.

ALBANY, N. Y.—Bids are asked until Aug. 7 for improving about three miles of Burr's Mills road. Edw. A. Bond, State Engr.——The following awards have been made for improving public highways: Joseph Walker, Mariner's Harbor, Road No. 126, Broome county, $15,550; Park Bridge Road, No. 127, Broome county, $19,433; Delaware River Road, No. 145, Delaware County, $4,900. The board of supervisors of Broome county, Broome county, Fenton Road, No. 134, $17,735.

BUFFALO, N. Y.—The following low bids have been submitted: Olcott Ave., macadam, H. P. Burgard, $6,400; asphalt, German Rock Asphalt & Cement Co., $9,700; brick, J. H. Gipp, $9,600; Adams St., asphalt, Barber Asphalt Co., $3,048; Kilhoffer St., asphalt, Barber Asphalt Co., $8,420; Congress St., asphalt, Barber Asphalt Co., $2,183; South Park Ave., asphalt, Barber Asphalt Co., $8,453.

BUFFALO, N. Y.—Bids are asked by the board of public works until Aug. 6 for paving three streets with each kind of pavement. F. G. Ward, Comr.

CORTLAND, N. Y.—E. S. Dalton, Cy. Clk., writes us that the following bids have been received for constructing brick and macadam pavement, as advertised in the Engineering News: J. M. Homer, Olean, 4 and 5-in. sandstone curb, trap rock surface, $28,642 and $29,342 respectively; Bull & Hookway, $28,784. Bids rejected as being too high.

DUNKIRK, N. Y.—Bids are asked until Aug. 12 for constructing 25,100 sq. yds. pavement, 280 ft. circular curbing, 15,000 ft. drain tile, etc., as stated in our advertising columns. J. P. Groesch, Cy. Clk. Plans and specifications are on file at this office.

FULTON, N. Y.—Bids may soon be asked for paving Oneida and East Fourth Sts. with macadam. Civil Engineer Farrington, Syracuse, is interested.

HAMBURG, N. Y.—Streets may be paved with brick, at cost of about $30,000.

LONG ISLAND CITY, N. Y.—The following paving, curbing and flagging contracts have been awarded: Hly Ave., granite blocks, John I. Young, $7,040; Ninth St., granite blocks, A. P. Tuohy & Co., $7,958; Front St., asphalt, Barber Asphalt Co., $7,464; Jamaica Ave., asphalt, Barber Asphalt Co., $58,217; Cooper Ave., Ridgewood, macadam, 24,000 sq. yds., Frank Monterverde, $3,475.

TONAWANDA, N. Y.—Franklin Square may be widened; est. cost, $75,000. Fred. P. Allen is interested.

Information concerning contracts to be let or of supplies to be purchased, and corrections of errors and omissions in published items, are invited.

NEW YORK, N. Y.—Bids are asked by the Department of Parks, Arsenal Bldg., Fifth Ave. and 64th St., until Aug. 6 for constructing an entrance to Bronx Park from the Mosholu Parkway, including abutments for a bridge. John E. Eustis, Comr.

NEW YORK, N. Y.—The grades at Fifth Ave. and 42d St. may be rearranged. It is proposed to lower the surface of 42d St. 14 ft., including the roadway and sidewalks, and to raise the surface of Fifth Ave., 2 4-5 ft.; est. cost, $380,000. Wisner Martin is Asst. Engr. of the Bureau of Highways.

NEWTON, N. J.—Bids are asked by the board chosen freeholders until Aug. 25 for macadamizing various roads, as stated in our advertising columns. Emmet H. Bell, Dir.

PERTH AMBOY, N. J.—The question of opening Stockton St. to Augusta St. is being agitated.

SEABRIGHT, N. J.—A stone road will probably be built; est. cost, $60,000. Wm. H. De Nyse, County Engr., Long Branch.

TRENTON, N. J.—An ordinance providing for the paving of Academy and Montgomery Sts. with asphalt has been passed. C. E. Murray is Cy. Clk.

ALLEGHENY, PA.—The following paving contracts have been awarded: Norman St., Atlas Construction Co., $6,454; Preble Ave., North Side Coal & Land Co., $17,712; Davis Ave., Atlas Construction Co., $6,353.

CANONSBURG, PA.—Bids are asked until Aug. 10 for paving about 2,500 ft. on East College St. Geo. C. McPeake, Clk.; O. K. Taylor, Borough Engr. (See advertising columns.)

MACON, GA.—College St. will be paved. Cotton Ave. may soon be paved.

NEW ORLEANS, LA.—The sum of $50,000 has been appropriated for repairing asphalt streets.

GREENVILLE, MISS.—Various streets will be paved. Engineer Allen is interested.

MEMPHIS, TENN.—Petitions will be presented providing for asphalt paving. Alexander Allison, Pres. Merchants' Exchange, is interested.

LOUISVILLE, KY.—A driveway to Cherokee Park is being discussed. C. D. Meyer is interested.——The cost of paving nine streets with brick will be about $62,000.——The American Standard Asphalt Co. received contract for paving Rosewood Ave. and First St. with asphalt, at $16,000.

BOWLING GREEN, O.—East Wooster St. will be improved. J. E. Kelly is interested.

CINCINNATI, O.—A. J. Henkel & Bro. received the contract for macadamizing Delhi Ave., at $3,000.——The county engineer will prepare estimates of the cost of paving Spring Grove Ave. with granite blocks.——Estimated cost of paving Mitchell Ave. is $130,000.——Highland Place will be macadamized.

DAYTON, O.—F. M. Turner, Cy. Engr., has prepared plans and specifications for paving Linden Ave.

LORAIN, O.—The Ohio Engineering Co. received the contract for paving Third Ave. with Metropolitan block, at $15,529; Bank St., $7,668, and Prospect St., $6,850.

SIDNEY, O.—Bids are asked by the board of public service until Aug. 17 for the construction of about 45,993 sq. yds. of brick, asphalt, bituminous macadam or asphalt block paving, as stated in our advertising columns. Chas. Abbott, Pres.; Riggs & Sherman, Engrs.

TOLEDO, O.—A petition is in circulation providing for the paving of Monroe St.

BLOOMINGTON, IND.—Bids are asked until Aug. 4 for macadamizing and constructing brick sidewalks on Fairview St.; also for improving 10th St. Wm. F. Browning, Cy. Clk.

CORYDON, IND.—Bids are asked for constructing three gravel roads, 37,063 ft. long; est. cost, $10,702. George L. Hess, Audtr., Harrison county.

GREENCASTLE, IND.—Bids are asked by the county commissioners, Putnam county, until Aug. 4 for improving about two miles of stone road. S. H. Judy, Comr.

GREENCASTLE, IND.—P. F. Stoner, County Audtr., writes us that bids are readvertised until Aug. 15 for improving about 18 miles of stone roads.

INDIANAPOLIS, IND.—August Wocher received contract for improving the Flower Mission Park at the City Hospital, at $5,279.

PAOLI, IND.—Bids are asked by the board of commissioners until Aug. 5 for constructing about 27,714 ft. of road. J. H. Weeks, Comr.; G. W. Tegarden, Audtr. Orange county. Specifications are on file at this office.

PRINCETON, IND.—J. W. Phillips, Bd. of Comrs., writes us that the following bids have been received for constructing over 59 miles of macadam roads: Henry Eigenmann, Rock Port, $122,038; C. P. White, Boon, $122,024 (contract awarded); Revis & Warnick, $123,919; J. E. Hart, Nevay, $122,100.

RICHMOND, IND.—Bids are asked for macadamizing North D St.——City Engineer Weber's estimate for repaving Main St. with brick is $4,691.

SALEM, IND.—Bids are asked by the board of commissioners until Aug. 3 for constructing about 10 miles of gravel road. Frank E. Morris, A. W. C.

GRAND RAPIDS, MICH.—Specifications have been approved for paving State St. with brick. Bids will soon be asked. Contracts have been let for repairing various streets with asphalt.——James McDermott & Son received the West Fulton St. paving contract at $19,349, and J. H. Sullivan the Commerce alley paving contract at $5,667.

IONIA, MICH.—Bids are asked until Aug. 14 for constructing about 11,300 sq. yds. of brick pavement on Main St., the city furnishing the brick. M. Wilson, Cy. Clk.

LANSING, MICH.—H. A. Collar, Cy. Engr., writes us that the following bids have been received for brick paving Lane Block; (1) Allegan St., (2) Capitol Ave.: Geo. Keith (1) $10,660, (2) $3,518; Geo. Kueal, (1) $10,950, (2) $3,518; M. E. Fitzpatrick (1), $10,950; (2) $3,400; Elkhart Const. Co. (1), $14,777, (2) $4,777; E. Williams (2), $3,969.

MARSHALL, MICH.—Recorder Gardanier's estimate for paving State St. is $35,000.

ALCONDA, ILL.—The Board of Local Improvements has decided upon a survey of the village to establish grades, and has also decided upon a small amount of paving. C. A. Prout, Engr., Wheaton, Ill.

BENTON, ILL.—The city council has decided to macadamize North St. and part of East and South Sts.

GALESBURG, ILL.—Paving on various streets is discussed. F. M. Connolly is Cy. Engr.

MOLINE, ILL.—A petition in circulation for paving Market Square.

COUNCIL BLUFFS, IA.—The resolution providing for the paving of about 18 streets has been passed.

DES MOINES, IA.—A petition is in circulation for opening Fifth St.; est. cost, $23,500.

DES MOINES, IA.—Bids are asked by the board public works until Aug. 7 for constructing about 1,552 sq. yds. brick pavement. W. W. Wise, Bd. Pub. Wks.

OTTUMWA, IA.—East Maple Ave. will be paved. City Engineer Allen is interested.

SUPERIOR, MINN.—The paving of 12th St. is being discussed.

ST. PAUL, MINN.—Bids are asked by the board of public works until July 30 for improving Grotto St. by filling and leveling with Kettle River sandstone. R. L. Gorman, Clk.

ST. PAUL, MINN.—Bids are asked by the board of public works until Aug. 3 for grading Hamline Ave. J. S. Grode, Pres.

WICHITA, KAN.—University Ave. and Seneca St. will be paved. J. L. Leland is Cy. Clk.

YORK, NEB.—Petitions are in circulation for street paving.

CHEYENNE, WYO.—Bids are asked until Aug. 23 for constructing roads and walks at Fort D. A. Russell. Capt. W. S. Scott, Q. M. (See advertising columns.)

KALISPELL, MONT.—City Engineer Jaquett is preparing plans and specifications for grading, graveling, curbing and boulevarding about ½ mile in the residence section.

KANSAS CITY, MO.—Bids are asked by the board public works until July 30 for constructing granitoid sidewalks. D. W. Pike, Cy. Engr.

WEBSTER GROVES, MO.—Bids are asked until Aug. 3 for macadamizing and graveling Maple Ave. A. B. Kauffman, St. Comr.

HOUSTON, TEX.—Houston Ave. will probably be paved. Alderman Puls is interested.

SPOKANE, WASH.—The city engineer has completed plans for grading, parking and sidewalking various streets.——A petition is in circulation for paving Second Ave. with asphalt.

SEATTLE, WASH.—Reports state that S. Normile received contract for improving East Cherry St., at $6,981.

TACOMA, WASH.—Surveys are being made for the government wagon road from Longmire's Springs to Paradise valley, Mount Tacoma; $10,000 has been appropriated for building roads.

ONTARIO, ORE.—Bids are being received for grading and graveling Oregon St.

BERKELEY, CAL.—Emerson and Derby Sts. have been ordered macadamized. E. Q. Turner is Clk.

LOS ANGELES, CAL.—Ordinances providing for the paving and improving of various streets have been approved. H. J. Lelande is Cy. Clk.

PETALUMA, CAL.—Upham St. will be macadamized. Bids will soon be asked. A. Newburgh is Cy. Clk.

RIVERSIDE, CAL.—Reports state that the contract for paving 15 blocks with asphalt will be let the latter part of August.

SAN DIEGO, CAL.—The city engineer will prepare plans and specifications for paving Fifth St. with asphalt. Geo. D. Goldman is Cy Clk.

SAN FRANCISCO, CAL.—The paving of Green St. has been petitioned for.

SAN LEANDRO, CAL.—E. B. Stone received contract for macadamizing a portion of the county road between Hayward and Mt. Eden, at $4,900.

SALT LAKE CITY, UTAH.—Bids are asked by the board of public works until July 31 for paving Second South St. S. Clawson, Chn.; Louis C. Kelsey, Cy. Engr.——Hudson Ave. will be extended. City Engineer Kelsey is interested.

MANUFACTURING PLANTS.

PORTSMOUTH, N. H.—Stated that the White Mountain Paper Co.'s plant in this city will be converted into a lumber and pulp mill.

SALEM, MASS.—Naumkeag Coton Co. will have 48 x 64 x 44-ft. engine house and 1,500-HP. Corliss engine; contract let to G. H. Cotting & Co.

BRADFORD, R. I.—Contract for extending U. S. coaling plant in this city was let to A. Smith, 39 Cortlandt St., New York.

HARTFORD, CONN.—Woodland Paper Mill, Incorporated, reported destroyed by fire; loss, $150,000. J. T. Gamby is Supt.

BUFFALO, N. Y.—McKinnon Dash Co. has filed plans for brick factory, to cost $40,000.

SCHENECTADY, N. Y.—Works of American Locomotive Co. are shortly to be improved.

PASSAIC, N. J.—The Hayden Chemical Works at Garfield reported as destroyed by fire.

ALTOONA, PA.—The P. R. R. Co. is to spend $5,000,000 in improving its shop facilities at this place. A central factory to cost $2,000,000 is to be erected and the various foundries are to be grouped. Work has already started.

LANCASTER, PA.—The International Cream Separator Co., P. E. Shee, will have plans made for 2-story brick, slow-burning, 50 x 150 ft., factory at this place.

MEDIA, PA.—Chester Dock Mills, which have been idle for several years, have been purchased by Pemberton S. Hutchinson; consideration named, $50,000.

PHILADELPHIA, PA.—The Hines Enamel Dial Co., 40th St., have plans for 2-story brick, slow-burning, 60 x 80 ft., factory.——Quaker City Automobile Co., 138 N. Broad St., is having plans made for 6-story brick and steel fireproof factory at 140 N. Broad St.; power plant will be installed.——Geo. Kessler, Drexel Bldg., Philadelphia, has let contract to C. J. Miller for 4-story, brick, slow-burning, 50 x 160 ft., laundry building; cost, $55,800.——Kendrick & Roberts, 1120 Chestnut St., have contract for brick and steel, 50 x 225 ft., addition to shop of Philadelphia Rapid Transit Co.; estimated cost, $20,000.

SHAMOKIN, PA.—Wm. F. Koelle & Co., Archs., Heed Bldg., Philadelphia, are making plans for 5-story fireproof brewery for the Shamokin Brewing Co. Plant consists of brew house, power house, stock house, wash house, etc.

WILLIAMSPORT, PA.—Wm. F. Koelle & Co., Archs., Heed Bldg., Philadelphia, have asked bids for 4-story fireproof addition to brewery of John Welker. New power equipment, special machinery and elevators will be installed.

YORK, PA.—Hamme & Leber, 10 W. Market St., are making plans for 3-story brick, slow-burning, 50 x 250 ft., mills for Jos. Black Sons & Co.; est. cost, $50,000.——Keystone Farm Machine Co. has had plans made for a 3-story brick, slow-burning, 170 x 100 ft., addition to their factory; est. cost, $10,000.

TARANTUM, PA.—Fidelity Glass Co. will improve its plant at a cost of about $30,000.

BALTIMORE, MD.—Contract for 2-story brick, 60 x 120 ft., foundry for H. Friedenwald at Montford Ave. and Charles St. let to Geo. Bunnecke & Sons; est. cost, $25,000.

WILLIAMSPORT, MD.—H. E. Yessler, Arch., 13 E. Market St., York, Pa., has been making plans for grouping the six buildings for tannery for W. H. Bryan & Son. Buildings are to be of brick, stone and frame, with complete equipment.

NORFOLK, VA.—Seaboard Cement Co. is to build a Portland cement works in this city.

CLARKSBURG, W. VA.—James Bowen writes us that proposed plant of Elk Carriage & Mfg. Co. is to consist of four brick and frame buildings, the est. cost of which is $12,000; est. cost of equipment, $17,000.

KEYSER, W. VA.—Patchett Worsted Co., F. M. Reynolds, Pres., will erect 150 x 264 ft. building, to contain steam plant, four combs, three cards and 2,000 spindles, for manufacturing worsted yarns; dyeing plant will also be installed.

CHARLOTTE, N. C.—Contract for 4-story, 72 x 76 ft., addition to Norris cotton mill at Caterchee, S. C., let to Loftus & Thompson.

AMERICUS, GA.—E. D. Aisley, Mgr., Ice & Cold Storage Co., writes that they expect to be operating in 20 or 25 days. Plant is to consist of two brick buildings, and the est. cost of equipment is $15,000.

VALDOSTA, GA.—Board of Trade are working for establishment of $500,000 cane sugar factory here. The board of trade is also working to have the Gulf States Refining Co. locate a factory for making starch from Cassava.

TAMPA, FLA.—Guerra, Diaz & Co. contemplate the erection of a cigar factory at corner 7th Ave. and 16th St.

BIRMINGHAM, ALA.—The Birmingham Boiler Works will build a plant in East Birmingham.

VICKSBURG, MISS.—Lewis & Newland, Woodville, Miss., have contracted with the American Machinery & Construction Co. for installation of Baxter cottonseed plant.

KINDER, LA.—A 500-bbl. rice mill is proposed for this place.

COLUMBIA, TENN.—R. C. Ewing writes us that contracts have been let and buildings for McLanahan Harness & Collar Co. will be finished in 30 days.

BOWLING GREEN, KY.—A. Woodward and Oscar Peterson, Duluth, Minn., will, it is said, invest $200,000 in construction of brewery and ice plant in this city.

OWENSBURG, KY.—Harry Guenther & Bro., proprietors Novelty Foundry & Machine Works, will erect new building.

CANTON, O.—Stark Furniture Co., A. P. Dennis, Pres., will erect factory for manufacture of folding beds.

CLEVELAND, O.—Chase Machine Co. will make extensive improvements to its plant.

DAYTON, O.—Dayton Rubber Mfg. Co., W. S. Pupman, Springfield, O., will open plant at this city for manufacture of rubber goods.

FREMONT, O.—American Razor Strop Co., Chicago, Ill., will remove to this city.

HALLOWAY, O.—Contract for new car shops at this place for the B. & O. R. R. Co. was let to Arch. M. Campbell Co., Chicago, Ill.

MARIETTA, O.—Pattin Bros. Co. contemplate additions to its foundry and machine shop.

PIQUA, O.—Wood Shovel & Tool Co., whose plant was recently burned, will rebuild a fireproof structure.

TOLEDO, O.—The Toledo Foundry & Machine Co., C. E. Wnorwell, Secy., will erect foundry building and machine shop for manufacture of dredges, excavators, etc.; est. cost, $60,000.

INDIANA HARBOR, IND.—Standard Forging Co. has plans for foundry plant to cost $100,000. Main building will be 1 story, 100 x 500 ft.

MOORESVILLE, IND.—The Mooresville Improvement Assn. has let contract to Wm. Butler, Indianapolis, Ind., for erection of bedstead factory, to cost $30,000.

NEW RICHMOND, IND.—Charles Kirkpatrick is interested in project for an automobile factory for this place.

ALPENA, MICH.—H. Kimball Loud, Au Sable, Mich., 2d Vice-Pres. El Cajon Portland Cement Co., writes us that contract for building a 1,500-bbl. plant at this place has been let to Robt. F. Wentz Engineering Co. The plant is to be ready March, 1904.

LANSING, MICH.—Jarvis Engine & Machine Works will erect plant, including machine shop and power house, on Lake Shore road.

OLYMPIA, WASH.—W. H. Kneeland, Shelton, Wash., is interested in establishment of saw-mill at this place.

TACOMA, WASH.—Stated that $50,000 will be spent in enlarging plant of Pacific Starch Co.

SAN PEDRO, CAL.—San Pedro Canning Co., W. W. Beach, Mgr., will expend $8,000 on its plant.

LEWISTON, IDAHO.—Lewiston Marble & Granite Works will establish plant in this city.

LACHINE, QUE.—The Canadian Radiator Co. will build a factory.

BRANTFORD, ONT.—American Seeding Co., Springfield, O., will establish factory here.

VANCOUVER, B. C.—Benton C. Turner, New York, will erect wood pulp mill on Gulf shore, utilizing waters of Powell River to furnish power. A flouring mill may also be constructed on the water front.

MISCELLANEOUS CONTRACTS

TELEPHONE WORK.—Kingston, Ont.—The Bell Telephone Co. will spend $40,000 in improving its service.

WATER TOWER.—Los Angeles, Cal.—Fire Commissioners are urging securing of water tower at cost of about $7,000.

DITCH.—Franklin, Ind.—Bids are asked until Aug. 10 for construction of M. D. Wiley ditch. J. B. Duckworth, Drainage Comr.

DRAIN.—Columbus, Ind.—Wm. A. Morris, County Auditor, will call for bids for constructing a 8,842-ft. long ditch in Clifty township.

DITCH.—Storm Lake, Iowa.—J. F. Parrish is making preliminary surveys for a 10-mile county ditch in Newell and Providence townships.

STEAM PLANT.—Grand Rapids, Mich.—Thomas Johnston, Ferrysburg, Mich., offered to furnish a steam plant for suction dredge for $11,525.

Information concerning contracts to be let or of supplies to be purchased, and corrections of errors and omissions in published items, are invited.

TUNNEL.—Houston, Tex.—City Engineer Dormant has completed plans and specifications for the Preston St. tunnel. It is to be about three blocks long.

UNDERGROUND WIRES.—Canandaigua, N. Y.—The village board has ordered all wires on business part of Main St., save trolley wires, placed underground.

DRAINAGE CHANNEL.—Falls City, Neb.—A drainage district is to be organized to construct a new channel for the Nemaha River, at a cost of about $7,000 per mile.

DOCK IMPROVEMENTS.—New London, Conn.—Bids are asked by the constructing quartermaster until Aug. 22 for dock improvements at Fort H. G. Wright, N. Y.

DRAIN.—Ethel, Ont.—Bids are asked until Aug. 10 for constructing the Lamont Drain, consisting of 39,450 cu. yds. excavation; est. cost is $5,917. John McIntosh, Clk.

WHARF WORK.—New York, N. Y.—Contract for repairing wharf and removing boulder at Fort Michie, N. Y., was let to T. H. Scott, New London, Conn., for $9,500.

HIPPODROME.—New York, N. Y.—A company in which ex-Senator Wm. H. Reynolds is said to be interested will spend about $1,000,000 in building a hippodrome at Coney Island.

JETTIES.—Asbury, Park, N. J.—Bids are asked until Aug. 8 for system of jetties for beach protection at Asbury, Park. J. L. Kimmonth, Secy. (See advertising columns.)

WHARVES.—San Francisco, Cal.—The Harbor Commissioners are having estimates made for two 800-ft. long 125-ft. wide wharves, which it is proposed to construct at Berry St.

RETAINING WALL.—Washington, D. C.—Contract for retaining wall at League Island navy yard let to E. F. Fonder, 17 N. Juniper St., Philadelphia, Pa.; cost is about $50,000.

OIL DRILLING.—Bakersfield, Cal.—The Associated Oil Co has let a contract to the Bakersfield Iron Works Co. for 50 rig irons, and drilling oil wells is to be commenced at once.

SUBWAY.—Springfield, Ill.—Construction of subway at 8th St. and Eastman Ave. under tracks of Chicago & Alton R. R. proposed; est. cost about $37,000. Frank H. Hamilton is Cy. Engr.

LEVEE WORK.—Washington, D. C.—Straub & Cheshire, Helena, Ark., at $56,296 were the only bidder, July 8, for levee work in the White River Levee District. Their bid has been accepted.

LEVEE WORK.—New Orleans, La.—Bids are asked until Aug. 4 for about 358,000 cu. yds. levee work in the Fifth Louisiana Levee District. J. T. McClellan, Pres., Cotton Exchange Bldg., New Orleans.

DREDGING.—Montgomery, Ala.—Bids are asked until Aug. 12 for dredging at west pass entrance to Apalachicola Bay, Fla., and east pass entrance to Carrabelle Harbor, Fla. (See advertising columns.)

LEVEE WORK.—New Orleans, La.—Bids are asked until Aug. 17 for constructing about 209,300 cu. yds. earthwork in the Atchafalaya and Lafourche Levee Districts. Capt. Chas. S. Bromwell, U. S. Engrs.

WHARF WORK.—Norfolk, Va.—Contract for rebuilding wharf and repairing warehouse on Pier 7, for the Merchants & Miners' Transportation Co., Baltimore, Md., let to E. Crose & Sons, for about $20,000.

PIPE.—San Francisco, Cal.—Reported that bids are asked until Aug. 12 for furnishing about 900 tons c.-i. pipe and 12,000 ft. galvanized-iron pipe. Major C. A. Devoe, Q. M. U. S. A., 36 New Montgomery St.

CONDUITS.—Montreal, Que.—Chas. E. Phelps, C. E., City Hall annex, Baltimore, Md., has been selected as consulting engineer for laying conduits by this city. It is estimated that the system will cost about $5,000,000.

FIRE DEPARTMENT NEEDS.—Bakersfield, Cal.—A $35,000 bond issue has been voted for department improvements, among which will be new engine, $5,000; new chemical engine, $2,750; fire alarm system, $5,000.

PIER.—New York, N. Y.—The Central Railroad of New Jersey, acting with the local dock department, will erect 3-story bulkhead shed on West St., the upper part of which will be used for a public recreation place.

GATEWAY.—St. Louis, Mo.—Plans are under way for main gateway to Louisiana Purchase Exposition. The structure is to be 70 ft. high, 300 ft. long and 60 ft. wide; shaped like a capital U, and is to cost between $30,000 and $50,000.

SLUICE GATES.—New York, N. Y.—Bids are asked until Aug. 11 by Aqueduct Commissioners, for 26 3-ft. x 6-ft. sluice gates with necessary lifting machinery, for new gate house, Old Croton Dam. Wm. H. Ten Eyck, Pres. Comm., 299 Broadway, New York.

KITCHEN EQUIPMENT.—Johnson City, Tenn.—Bids are asked until Aug. 25 for furnishing kitchen equipment for general mess hall Mountain Branch, N. H. D. V. S. Moses Harris, Gen. Treas., 346 Broadway, New York. (See advertising columns.)

RIP-RAP, GRANITE STONES.—New York, N. Y.—Bids are asked until Aug. 5 for furnishing, delivering and putting in place rip-rap stone; also for furnishing and delivering granite stones for bulkhead or river wall. McDougall Hawkes, Dock Comr., Battery Pl.

DITCH.—Kansas City, Mo.—The state drainage board has rejected the bids received for constructing the Hubbard county ditch and Felton ditch in Clay county, as they were considered excessive. The bid for the former work was 15 cts. per cu. yd., and for the latter 16 cts.

OIL PIPE LINE.—Sour Lake, Tex.—It is announced that the oil pipe line being built by the Standard Oil Co. from Neodesha, Kan., to Independence, Kan., is to be extended to Port Arthur, Tex. A number of laterals will be built, and it is proposed to erect new refineries at Port Arthur. The company will also increase its fleet of oil vessels.

DRY DOCK.—Washington, D. C.—The following bids weer received July 25 for constructing a concrete and granite dry dock, No. 3, at Norfolk, Va., navy yard; (1) bid for work complete; (2) deduct for railings omitted; (3) bearing piles omitted; (4) add if dock length be increased; (5) alternate bid: John C. Rogers Co., New York, N. Y., (1) $910,000, (2) $2,500, (3) $70,000, (4) $1,400 (with piles), $1,325 (without piles); Edward F. Fonder, Philadelphia, Pa., (1) $1,273,500, (2) $8,500, (3) $73,000, (4) $2,400 (with piles), $2,300 (without piles); John Peirce, New York, N. Y., (1) $1,057,751, (2) $3,167, (3) $44,910, (4) $1,763 (with piles), $1,647 (without piles); N. Y. Continental Jewell Filtration Co., New York, N. Y., (1) $1,033,147, (2) $2,766, (3) $57,980, (4) $1,662 (with piles), $1,581 (without piles); P. J. Carlin & Co., Brooklyn, N. Y., (1) $1,152,478, (2) $5,400, (3) $70,000, (4) $1,600, (5) $950,000,000 (a), $945,000 (b). Contract let to John C. Rogers Co. for $910,000.

SUBWAY.—Buffalo, N. Y.—The following bids were received by the grade crossings commission July 17 for constructing subway at Clinton St.: Substructure—McKeown & Johnson, $39,207; E. C. Rumrill, $35,163; Frederick J. Mumm, $39,117; F. J. Reap, $35,376; German Rock Asphalt & Cement Co., $36,646; Anna Gehres, $35,425; Miller & Franklin, $36,801; Henry P. Burgard, $36,043. Superstructure—Russell Wheel & Foundry Co., Detroit, Mich., $30,860; American Bridge Co. of New York, $32,790; Owego Bridge Co., $32,300; King Bridge Co., Cleveland, O., $32,800. Contracts let to E. C. Rumrill and Russel Wheel & Foundry Co.

DREDGES.—Philadelphia, Pa.—We are informed that the following bids were received by Capt. J. C. Sanford, U. S. Engrs., July 18, for constructing two steel, twin-screw, seagoing suction dredges for Lakes Erie and Michigan: (1) bid for two dredges, delivered at option; (2) two dredges, delivered at Cleveland; (3) delivered at Grand Haven; (4) bid for one dredge, delivered at option; (5) one dredge, delivered at Cleveland or Grand Haven; Bucyrus Co., South Milwaukee, Wis., (1) at Cleveland or Chicago, $235,933 each, 10 months; (2) $237,175; (3) $237,175, 10 months; (4) at Cleveland or Chicago, $238,433, 10 months; (5) $240,933, 10 months; John H. Dialogue & Son, Camden, N. J., (1) at Camden, $242,000 each, 14 and 16 months respectively;; (4) at Camden, $245,000, 14 months; Maryland Steel Co., Sparrows Point, Md., (1) at Sparrows Point, $165,000 each, 11 months; (2) $169,750; (3) $170,000; 11½ months; Great Lakes Engineering Works, Detroit, Mich., (1) at Detroit, $200,000 each, 13 months; (2) $200,500; (3) $200,500, 13 months, (4) at Detroit, $200, 12 months; (5) $200,500, 13 months.

MINING.—St. Julian Gold Mining Co., Livingston, Mont., W. A. Berery, Pres., will erect 10-stamp mill this summer.——Oro Fino Development Co., Oro Bianco, Ariz., will put in cyanide plant.——Clear Creek Mining & Reduction Co., Goldern, Colo., will add refinery to its smelting plant.——Sunset Copper Mining Co., Everett, Wash., John McManus, Mgr., contemplate erection of reduction works.——F. B. Feetham and R. R. Smith, Grand Forks, N. Dak., will build mill for their Montana interests.——Thunder Mountain Gold Co., S. C. McKibben, Mgr., Elk City, Idaho, will put in 5-stamp mill.——Carrol & Martin, Helena, Mont., contemplate erection of smelter on their property in the Ontario District.——The Minnesota Iron Co., Duluth, Minn., is preparing to open its 12th mine, near Hibbing.——Reported that company in which W. E. Winnie, 425 Bullard Block, Los Angeles, Cal., is interested, will install a 100-ton smelter and a pumping plant.——A 6-stamp mill is to be erected soon at Sunrise Mine. Frank Heath, Supt., Mokelumne, Cal.——Commanche Mining & Milling Co., Silver City, New Mex., are figuring on reconstructing their plant recently destroyed by fire.——The Tigner-Colquitt Co. will erect new furnace in the Terlingua District.——The Montana Mineral Land Development Co., Basin, Mont., will build a MacDonald smelter.——The Ashanti Lands Ltd. Co. will install large plant at Kamloops, B. C., for treatment of iron mash ore.

U. S. POSSESSIONS AND CUBA.

LIGHT-HOUSES.—Honolulu.—Capt. Pond, U. S. N., while at Midway Island, made surveys for light-houses and the necessary works to establish a naval base there.

CABLE.—Manila, P. I.—The Pacific Commercial Cable Co., San Francisco, Cal., will soon make surveys for the new cable from Manila to Shanghai. R. Lucas, Engr., will have charge of the work.

RAILWAY.—Philippines.—The Philippine Commission has decided to provide for the building of the Dagupan-Baguio Railway, either as government or private enterprise. It will offer the Benguet road from Dagupan to Pozurrubio and thence to Baguio, as an inducement.

SMELTER.—Alaska.—L. C. Shaw, Constructing Engineer, of Salt Lake City, Utah, has left for the properties of the Brown-Alaska Mining Co. on the Prince of Wales Island, southeastern Alaska, where he has a contract for the erection of a 1,000-ton smelter. Other improvements are to be made, including new wharves and buildings.

PUBLIC IMPROVEMENTS.—Honolulu.—Appropriations have been made by the legislature for various public improvements, in which are included $3,000 for electric lighting in Fourth district of Honolulu and $6,000 for Fifth district, $7,500 for water main from Nuuanu reservoir to Wyllie, $4,750 for Hilo water-works, $5,000 for developing water from Polipoli Springs, and $5,000 for the same purpose at Kamanaiki, including pipes.

ELECTRIC POWER DEVELOPMENT.—Cuba.—The Havana Electricity Co., Ltd., is reported to have been organized in London, with $1,500,000 capital, to carry on various works in electric power development, including the construction and operation of electric railways, tramways, lighting and power works, telephones, etc., adopting an agreement with Don Tiburcio Castenada and La Campania de Electricidad de Cuba to that purpose. The company's offices are at 4 Coleman St., London, E. C. E. G. Farish, 57½ Old Broad St., London, E. C., is one of the first directors.

SHIP CANAL.—Scotland.—Rufus Fleming, U. S. Consul at Edinburgh, reports that a company of London financiers has again taken up the project of building a ship canal between the Forth and the Clyde, and has adopted the scheme of D. & C. Stevenson, harbor engineers, of Edinburgh. A survey was made by that firm some years ago between Alloa, on the Forth, to Arrocher, on Loch Long, and a detail survey is now being made by them and plans are being prepared. Mr. Fleming says that the sum of $48,665,000 has been pledged towards materializing the project, which is about the cost as estimated by David A. Stevenson, C. E.

MEXICO.

JAIL.—Mulege, Lower California.—New jail to be built here; will cost $18,000.

SMELTER.—Puebla.—Plans being made for a large smelter here. F. Rule, Puebla, is interested.

MINING MACHINERY.—Tlalpa, Jalisco.—The Tlalpa Mining Co. will install new machinery at its mines here.

ELECTRIC LIGHT PLANT.—Tehuacan, Puebla.—An electric light plant is to be installed here by Ramon de la Fuente.

MILL ADDITIONS.—Sonora.—The Pinto gold mine here will add five stamps to its mill. B. Maier, Benson, Ariz., is agent.

SMELTER.—Santa Catarina, Lower California.—Stated that the Peninsular Copper Co. will establish a smelter near here.

SMELTER.—Geo. Mitchell, of the Mitchell Mining Co., will put in a 500-ton smelter at Acapulco next October, it is stated.

COFFEE PLANT.—The Milwaukee-Mexican Coffee Co. is preparing to construct a roasting and grinding plant near Jalapa, Veracruz.

SILK FACTORY.—Vera Cruz.—Factory for manufacture of silk goods to be established by G. Kato, a Japanese merchant of this city.

FACTORY.—City of Mexico.—A large cigarette factory to be erected here by a company organized for that purpose. F. H. Heath is Mng. Dir.

TELEPHONE.—Municipal authorities of Guaymas have contracted with Luis Velasco to establish and operate telephone system in that city.

IRON TANKS.—San Luis Potosi.—Roberto Ipina of this city will construct 70 iron water tanks on his ranch in this state, each of 20 meters diameter.

IRRIGATION.—Lic. Jesus Vera has obtained a concession from the Durango state government to construct a dam on the San Esteban River for irrigation purposes.

REFINERY.—Fuertes, Sinaloa.—Sinaloa Agricultural & Mfg. Co. organized for purpose of raising cane and manufacturing sugar. A refinery will be built near here.

RAILWAY.—Reports from Monterey state that the Mazapil Copper Co., W. H. Brown, Gen. Mgr., will build tracks from its mines in the State of Zacatecas to San Pedro.

WATER-WORKS AND SEWERAGE.—Plans are being prepared for the water-works and sewerage of the city of Torreon. The water available amounts to 1,000 gallons per minute.

ELECTRIC LIGHT.—San Blas.—H. B. Masset, representing California capitalists, has investigated the situation here with the view of establishing an electric light plant and street railway system.

STOCK MARKET.—City of Mexico.—W. H. Alexander has government concession for establishing a live stock market here. He will invest $300,000 in the construction of the necessary buildings, etc., and will complete the enterprise within five years.

COAL MINING.—Agustilan.—A company of American and Mexican capitalists has been organized as the Augustilan Coal Mining Co., to operate coal mines situated near here. The coal field embraces about 70,000 acres which have been acquired by the company.

LUMBER MILLS.—Chihuahua.—Stated that the Pine King Land & Lumber Co. has purchased a tract of timber land embracing 500,000 acres, situated in this state, and that it will establish a number of lumber mills. W. H. Welch, of Chicago, Ill., is interested.

POWER PLANT.—Reports from Monterey state that the Grand Canyon Copper Co., operating near Grand View, Ariz., has had estimates made for a power plant at Mooney Falls, on Cataract Creek, 40 miles from mine. Company also proposes to build a tramway into the canyon.

RAILWAY.—City of Mexico.—A syndicate of American capitalists, headed by former Governor N. O. Murphy, of Arizona, has applied to the government for a concession to build a railway from Buenos Aires, on the border of Arizona, to Point Lobos, situated on the Gulf of Lower California.

LUMBER MILLS.—Morelia.—Mexican Flume & Lumber Co. will immediately begin constructing a lumber mill near here. Company recently purchased tract of timber land in this state and the timber is to be utilized. It will build a railroad from the nearest railway point to the timber tract, 15 miles.

RAILWAY.—The legislature of the state of Michoacan has approved the grant of a subsidy of $3,000 for each kilometer constructed in the state of the Morelia & Tacambaro Ry., a concession for which is held, from the federal government, by A. J. Peyton. The road has been located from Irapuato, state of Guanajuato, to Morelia, Tacambaro andArio. H. H. Greenleaf, city of Mexico, is the representative of the company in Mexico.

TRAMWAY.—J. G. Dignowity, Gen. Mgr. Mexican Mining & Exploration Co., announces that his company will furnish the capital necessary for constructing an electric interurban tramway line from Santa Catarina and extending 28 miles through San Pablo, Monterey, to Huajuaco, all in the state of Nuevo Leon. It will traverse a rich mining and agricultural country. From Monterey branch lines will run to the smelters, the foundry and the Topo Chico springs. The power will be derived from the San Juan River, some 20 miles distant from Monterey.

RAILWAY.—Gov. Luis Torres of the State of Sonora is quoted as follows regarding the railway to be built through Western Mexico by American capitalists: "The projected road is to run from Douglas, Ariz., to Tobario, a harbor situated on the Pacific Coast of Mexico about 50 miles south of the mouth of the Yaqui River. A new port will be created at this point. This railroad will open up a marvelously rich mining country. The mining firm of Phelps, Dodge & Co. is behind the project, and there will not be much time lost in bringing it to completion.

LAND DEVELOPMENT.—Monterey.—Former Senator Marion Butler of Elliot, N. C., is at the head of an American syndicate with a capital stock of $1,000,000 which has recently purchased 1,200,000 acres of land in the state of Tamaulipas, adjacent to the Soto la Marina River. The syndicate has sold 100,000 acres to representatives of Boers and it will be used for colonization purposes. The remaining 1,100,000 acres is to be developed by the syndicate. It is well timbered with ebony, walnut, hickory and walnut, and immediate steps are to be taken, according to a statement of Senator Butler, to build lumber mills to utilize the timber. There are also extensive deposits of liquid asphalt which have been partly explored and somewhat developed, situated on the land. The indications of oil are abundant and a test well is to be bored as soon as the necessary machinery can be obtained. It is further stated that the syndicate will build a line of railroad from Tampico to the tract of land. The distance is about 100 kilometers. The Warner-Quinlan Asphalt Co. is said to be financially interested with Senator Butler in the development of the asphalt field.

FOREIGN CONTRACTS—EXPORT NEWS.

RAILWAY.—Portugal.—A Royal decree has been promulgated, authorizing the immediate construction of the first portion of the railway line from Setubal to the River Sado.

PHOSPHATE MINING.—Antigua.—Tenders for a concession to mine phosphate of lime and alumina in the Island of Barbuda will be opened by the Colonial Secretary, Antigua, on Oct. 1.

ELECTRIC TRACTION.—Brazil.—The Companhia Fuehas Urbanas do Recife a Olinda e Bebeirbe, of Pernambuco, now operating a 12-mile steam road in that city, is about to convert its system into electric traction.

RAILWAY.—China.—It is asserted that owing to the lack of Russian capital for the building of all the branch lines of the Manchurian railway, the Russian Government will invite foreigners to assist in the construction of the lines.

Information concerning contracts to be let or of supplies to be furnished, and corrections of errors and omissions in published items, are invited.

GRAVING DOCK.—Ireland.—Bids are asked by the Belfast Harbour Comrs., W. A. Currie, Secy., until Aug. 31 for constructing a graving dock, 750 ft. in length, and other collateral works, on the site adjacent to the Alexandra Graving Dock; and also alternative bids for graving docks, 800 ft. and 850 ft. in length, respectively. Harbour Office, Belfast.

MINING SUPPLIES, MACHINERY, ETC.—Corea.—The development of the mineral resources of Corea is evidenced by the increased demand for mining supplies, bags and rope. Machinery for agricultural and mining purposes, and sewing machines, are also in demand. Horace R. Allen is U. S. Consul-General at Seoul, Corea.

RIVER IMPROVEMENT.—Italy.—The contract for the diversion of the River Sele will be let Feb. 1, 1904. The river flows into the Mediterranean near Salermo, and is to be tapped in the hills and the water taken across to the Adriatic watershed to irrigate the province of Puglie. Particulars are known by Italian Consuls in foreign cities. The Italian Consulate in New York city is at 35 Broadway.

ELECTRIC TRACTION.—Australia.—The Victorian Minister of Railways is reported to have under consideration a project to construct an electric railway from Melbourne to Whittlesea, via Fitzroy, some 26 miles. A report on the practicability of the scheme has been made by J. D. Sillian, electrical inspector of the Public Works Department, favoring the plan. The total cost of construction and equipment will be about $850,000.

CANALS.—Italy.—The commission appointed by the Italian Government about two years ago to report on the advisability of establishing a system of water way in the northern part of the kingdom, has recommended a network of inland water courses of a total length of 2,112 miles. Northern Italy has already about 1,677 miles of navigable rivers and canals, and these can be connected by a system of auxiliary canals of a total of 434 miles. The commission estimates the entire cost of the proposed improvements at $22,774,000. The actual cost to the government is not expected to exceed $14,861,000, as at least $7,913,000 will be realized from gain of water power, estimated at 48,000 HP., and from increased facilities for agricultural irrigation.

CONTRACT PRICES.

[Where (*) precedes items under Contract Prices the work was advertised in Engineering News.]

*LAYING SIDEWALK, ETC.—Vailsburg, N. J.—E. A. McMurray, Boro. Engr., 22 Clinton St., Newark, writes that the following bids were submitted July 14 for laying flagging, curbing, etc.; (1) 7,500 lin. ft. 16-in. blue-stone curb, (2) setting old curb, (3) blue-stone corners, (4) setting old corners, (5) 33,400 sq. ft. blue-stone flagging, 2½ ins. thick; (6) laying old flagging, (7) 5,000 cu. yds. grading, (8) removing trees: Brown & Russling, Newark, (1) 40 cts. lin. ft., (2) 7 cts., (3) $7, (4) $1, (5) 18 cts. per sq. ft., (6) 3 cts. (awarded contract for items 1, 2, 3 and 4); Peter Boyle, Gouveneer St., Newark, (1) 41 cts., (2) 3 cts., (3) $7, (4) $1, (5) 16¾ cts., (6) 1½ cts. (awarded contract for items 5 and 6); Frank W. Snyder, Vailsburg, (7) 59 cts. (8) $8 each; Jacob Peter, Frelinghuysen Ave., Newark, (7) 55 cts., (8) $7.50 (awarded contract for both items).

PAVING.—Milwaukee, Wis.—The board of public works let contracts on July 16 for the paving of Virginia and North Water Sts. to the Badger Construction Co., at $2.11 and $2.14, respectively. Other bidders were: Henry Hase, $2.15 and $2.17; James O'Donnell, $2.25 and $2.27; W. J. Birdsall, Racine, $2.22 for both; R. J. Hickey, $2.17.

*PIPE SEWER.—Indiana, Pa.—R. M. Mullen, Boro. Engr., writes us that the following bids were received July 22 for constructing pipe sewers:

Bids Received at Indiana, Pa., July 22, 1903, for Constructing Pipe Sewers.

Quantities.		W. H. Caln, Bolivar, Pa.	R. A. Reighart, Johnstown, Pa.	H. C. English, Coral, Pa.	Herr & Co., Altoona, Pa.	Ott & Son, Pittsburg, Pa.	Diullis & Bro., Coral, Pa.	Ott Bros., Pittsburg, Pa.	Jno. Hermann, Latrobe Pa.
Extra excavation	500 cu. yds.	$0.40	$0.50	$0.48	$0.50	$0.75	$0.65	$0.50	$0.60
Concrete	100 " "	5.50	7.00	8.00	7.00	8.50	5.00	5.50	8.00
Brick work	100 " "	7.25	16.00	13.50	9.00	15.00	9.50	9.00	10.00
Manholes, complete ..	54 each...	34.00	60.00	44.25	32.00	37.00	35.00	43.00	23.00
Inspection pipe covers.	50 " ...	2.50	.....	.....	5.00	9.00	1.00	2.00	.....
Lumber	10,000 ft., B.M.	35.00	22.00	20.00	20.00	35.00	22.00	23.00	25.00
10-in. sewer pipe, laid.	3,000 lin. ft..	.60	.67	.53	.69	.83	.59	.58	.69
12-in. " " "	15,000 " "	.74	.90	.68	.80	.90	.69	.74	.69
18-in. " " "	5,000 " "	1.20	1.25	1.13	1.18	1.27	1.15	1.26	.89
10-in. cast-iron pipe...	48 " "	2.24	1.50	1.28	2.00	2.10	1.75	1.50	2.50
12-in. " " ...	180 " "	2.00	2.40	1.73	2.25	2.25	2.00	1.90	4.50
18-in. " " ...	72 " "	4.50	3.33	3.36	3.50	4.60	4.00	3.50	7.50
8-in. tile connections ..	200 " "	.55	.40	.15	.60	.75	.50	.50	.90
4-in. underdrain	10,000 " "	.20	.15	.11	.09	.20	.10	.10	.10
Total		$25,642	$30,193	$25,164	$25,771	$30,850	$23,637	$25,358	$22,962

ASPHALT PAVING.—Ashland, Wis.—M. T. Dozer, Cy. Engr., writes that the Barber Asphalt Paving Co., Chicago, submitted the only bid on July 13, 1903, for 15,000 sq. yds. of asphalt paving, at $2.19 per sq. yd.

STAKES.—Buffalo, N. Y.—Hafner & Ignatz submitted a bid for supplying stakes to the Bureau of Engineering, at $42 per 1,000, which has been recommended for acceptance.

*SEWERS.—Bond Hill, O.—A. J. Kiphart, Village Clk., writes that the following bids were received July 13, 1903, for constructing sewers; (1) bid of G. M. Gest, Cincinnati; (2) Van Sant & Meed, Cincinnati; (3) Douglas Plumbing & Heating Co., Cincinnati:

		1.	2.	3.
36-in. brick sewer..	1,600 lin. ft..	$4.15	$3.96	$4.60
33-in. " " ..	290 " "	4.00	3.86	4.25
30-in. " " ..	290 " "	3.50	3.86	4.00
27-in. " " ..	280 " "	3.65	3.36	3.70
12-in. tile pipe.....	11,000 " "	1.30	1.20	1.00
15-in. " "	3,300 " "	1.46	1.40	1.25
18-in. pipe	1,200 " "	1.75	1.90	1.80
21-in. "	700 " "	2.00	2.40	2.00
12-in. Y-branches ..	400 each...	1.30	.65	.80
15-in. " ..	132 " ...	2.00	.80	1.20
18-in. " ..	60 " ...	2.70	1.10	1.65
21-in. " ..	40 " ...	3.90	2.25	2.35
6-in. slants	100 " ...	.40	.40	.40
12-in. slant		1.80	1.00	1.10
15-in. "		2.00	1.50	1.15
18-in. "		3.50	2.00	2.00
21-in. "		5.10	2.50	2.80
24-in. "		6.00	3.00	3.10
Palmer inlet	55 each...	45.00	45.00	40.00
Manholes: Round ..	27 " ...	60.00	40.00	27.50
" Oval	27 " ...	30.00	37.50	27.50
" Brk sewr	15 " ...	30.00	40.00	25.00
Rubble masonry ...	50 cu. yds.	4.00	4.00	4.50
Concrete	50 " "	4.00	4.00	4.50
Remodeling intersection,	a sq. yd.	.25	.50	.50
Total		$40,971	$39,650	$36,280

ROAD.—San Juan, Porto Rico.—The Superintendent of Public Works of Porto Rico received the following bids on July 16, for the construction of 4.6 kilos of new road between Tallones and Adjuntes; five months' time is allowed for completion; contractor is obligated to maintain the road for four months after acceptance of work; contract awarded Raoul Marix; F. Vall-Spinosa, Secy. to Supt. Pub. Wks.:

Bids Received at San Juan, P. R., July 16, 1903, for Constructing a New Road in Porto Rico.

Quantities.		Jose Roig Colomer, Utuado.	Raoul Marix, Utuado.	Domingo Rinati, Ponce.	Luis F. Rubio, San Juan.	Roque Paniagua, San Juan.	W. D. Noble.
Excavation	91,000 cu. m.	$0.20	$0.14	$0.37	$0.25	$0.30	$0.28
Excavation in water	390 "	1.00	.50	1.00	.50	1.00	.32
Ditching	2,000 lin. m.	.10	.10	1.00	.25	.10	.24
Macadam	5,000 cu. m.	1.85	1.20	1.30	2.00	2.00	2.35
Screenings	800 "	1.00	.60	1.00	.60	2.00	1.10
Telford blocks	200 "	1.00	1.00	.50	.50	1.00	2.50
Third-class masonry	3,200 "	8.25	7.00	6.00	8.00	7.50	8.25
Retaining wall, laid dry.....	600 "	.90	2.25	2.00	2.50	3.00	2.70
Paving laid dry	500 sq. m.	.40	.80	.50	1.00	1.00	1.25
Paving, grouted	300 "	2.50	1.20	1.00	2.00	2.25	1.55
Concrete in arches	260 cu. m.	10.00	9.00	15.00	10.00	14.00	12.70
Concrete drain pipe	30 "	12.00	12.00	20.00	11.00	15.00	11.00
Wheel guards	184 each..	4.00	3.00	2.50	3.00	3.00	2.55
Total		$60,626	$47,577	$69,370	$65,629	$71,367	$71,518

STREET IMPROVEMENT.—Dayton, O.—F. M. Turner, Cy. Engr., informs us that the following bids were received July 24, 1903, for repairing and resurfacing various streets; (1) bid of Kirchner Construction Co., cor 8th and Plumb Sts., Cincinnati; (2) Cleveland Trinidad Paving Co., Cleveland; (3) Barber Asphalt Paving Co., Blymyre Bldg., Cincinnati; (4) Toledo Construction Co., Toledo:

	1.	2.	3.	4.
Asphalt repairing 9,442 yds.	$1.74	$1.95	$1.80	$1.89
5-in. concrete foundation...	.60	.70	.70	.75
Asp. resurfacing. 10,920 yds.	1.83	1.86	1.89	1.89
Total, repairing	$16,531	$18,531	$17,115	$17,993
Total, resurfacing	20,295	20,570	20,898	20,916

*PIPE AND CASTINGS.—Yonkers, N. Y.—A. W. Kingsbury, Clk., Manor Hall, informs us that the Camden Iron Works, Camden, N. J., received the contract for furnishing 48-in. pipe (from stock No. 7200, $28.90 per ton), at $32.40 per ton, and casting at 4 cts. a lb. The U.S. Cast-Iron Pipe & Foundry Co., Philadelphia, Pa., bid $37.70 and 4¾ cts., respectively. These materials are to be used in connection with the Grassy Sprain Reservoir dam enlargement, for the bids for that work see Water-Works.

*SEWER.—South Nyack, N. Y.—Joseph T. Kelly, Village Clk., writes that following bids were received on July 23, 1903, for constructing the Washington Ave. sewer; (1) work complete, excepting rock excavation, (2) rock excavation per cu. yd: Patrick T. Plunkett, 348 Webster Ave., Jersey City, N. J. (awarded contract), (1) $2,095, (2) $3; James Duell, Tarrytown, (1) $2,441, (2) $4; W. W. Whyard, Nyack, (1) $2,610, (2) $1.60.

SEWER.—Decatur, Ind.—D. M. Howe, Cy. Clk., informs us that E. Woods, Decatur, submitted the only bid for constructing the 10-in. branch sewer, connecting with the Marshall St. sewer, as follows: 77 cts. a ft.; manholes, $3.50 per ft.; lampholes, 70 cts. a ft.; Y's, 77 cts. each.

DREDGING.—Lorain, O.—The board of public service received the following bids on July 8 for dredging the river here: (1) place measurement, mud, per cu. yd.; (2) same for shale; (2) scow measurement, mud, per yd.; (4) same, shale; (5) logging, per hour; (6) total, place measurement; (7) total, scow measurement: G. H. Breymann & Bros., (1) 25 cts., (2) $1.75, (3) 17½ cts., (4) $1.25, (5) $20, (6) $332,750, (7) $236,125; J. J. Stang, (1) 26½ cts., (2) $2.26½, (3) 18¾ cts., (4) $1.62½, (5) $15, (6) $350,025, (7) $251,669; L. P. & J. A. Smith Co., (1) 24 cts., (2) $1.34, (3) 20 cts., (4) $1, (5) $18, (6) $327,937, (7) $267,000.

LEVEE.—Vicksburg, Miss.—Capt. Chas. S. Bromwell, U. S. Engrs., advises us that Helgason Bros. & Garbish, Vicksburg, were the only bidders on the work of constructing 447,000 cu. yds. of levee; bids opened July 15, 1903, and that no figures were submitted on Secs. 2 and 3. The contractors bid 29½ cts. a cu. yd. on Sec. 1, 109,500 cu. yds.; and 36½ cts. on Sec 4, 119,300 cu. yds.

PAVING.—Dayton, O.—Contract for paving Wayne Ave. let to David Beard, at $1.69 per sq. yd.

LEVEE.—Vicksburg, Miss.—The board of levee commissioners let a contract on July 15 for building the new Holly brook levee to John Scott & Sons, St. Louis, Mo., at 27½ cts. The contract involves some 400,000 cu. yds. of material.

PAVING.—Chariton, Ia.—J. G. Stewart & Co., City, received a contract for paving at $1.84 per sq. yd. McKloeen & Eikenberry, Chariton, bid $1.98; McCarty Stone Co., Davenport, $1.96; Mayden & Sheeley, Des Moines, $1.94; J. C. Likes, Des Moines, $1.87.

SIDEWALKING.—Columbus, Ga.—Robt. L. Johnson, Supt. Pub Wks., informs us that about 12,000 sq. yds. of cement sidewalk has been ordered laid, the contract price ranging from 95 to 97 cts. per sq. yd.

BRIDGE WORK.—Saginaw, Mich.—The bids for the Genesee Ave. bridge are given under Bridges. Following itemized bids were submitted in connection with this contract on July 23: John P. Cowing, extra weight, 4½ cts. per lb.; piling, 60 cts. per lin. ft.; concrete masonry, $7 per cu. yd.; timber B. M., 4 cts. per ft.; rip-rap, $2 per cu. yd.; Milwaukee Bridge Co., extra weight, 4 cts.; King Bridge Co., extra weight, 3½ cts.; Penn. Steel Co., 4½ cts.; Nat. Bridge Co., 1¾ cts.; American Bridge Co., 3½ cts.

*WATER-WORKS AND SEWERS.—Alexander Bay, N. Y.—Frank S. Hinds, Engr., Watertown, informs us that the following bids were received on July 8 for constructing water-works and sewers here, all bids were rejected July 18; the irregular bids were: A. R. Shannon, Watertown, laying 600 ft. of 14-in. intake pipe, [illegible] per ft.; laying 800 ft. of 12-in. sewer outfall, $2.52; [illegible] ft. of same, $2.52; Rensselaer Mfg. Co., Troy, hydrants, $24 each; valves, 4-in. $8, 6-in. $12.75, 8-in. $19.75, 10-in. $24.80, 12-in. $35; check valves, 10-in. $25, 14-in. $36; valve boxes, $2.25; Rumsy Pump Co., Seneca Falls, pumps and engines $6,820; Deane Pump Co., Holyoke, Mass., pumps only, $1,165 each; Walsh Boiler & Iron Works, Springfield, Mass., water tower, $4,465; Gould Bros., Watertown, pumps and engines, $5,900; Tippett & Wood, Phillipsburg, N. J., water tower, iron, $4,885; flange steel $4,746; tank steel, $4,647; Fairbanks, Morse & Co., New York, pumps and engines, $7,550; engines only, $4,650; Gould Mfg. Co., Seneca Falls, pumps and engines, A—$3,062, B—$3,377; John Jones, Theresa, N. Y., two 35-HP. engines only, $2,800; two 50-HP. engines, $3,900; Chas. Millar & Son Co., of Utica, bid $34.75 for 4-in. cast pipe, $33.75 for 6 and 8-in., and $32.75 for 10, 12 and 14-in.; $28 for 12-in., and $47 for 14-in. flexible joints; 3 cts a lb for special castings; $24 for hydrants; for 4, 6, 8, 10, 12-in. valves, $8, $13, $19, $29, and $37 respectively; $36 for 10-in., $72 for 14-in. check valves; boxes, $4.25; pig lead 4¾ cts., and jute 4¼ cts. a lb. each; Wm. Stanton, Cohoes, N.Y., bid 50 cts. and $3.50 for earth and rock excavation; for laying 4-in. pipe 15 cts. a lin. ft., 6-in. 17 cts., 8-in. 20 cts., 10-in., 30 cts. and 12-in. 31 cts.; setting hydrants, $3; for setting 4-in. valves 75 cts., 6-in. 85 cts., 8-in. $1, 10-in. $1.25, 12-in. $1.50 and 10-in. check valves $3; laying 600 ft. intake pipe, $3 a ft.; furnishing and laying vitrified sewer pipe, a ft.—12-in. 55 cts., 10-in. 50 cts., 8-in. 35 cts.; laying iron sewer pipe, 12-in. 75 cts., 8-in. 60 cts.; for 800 and 700-ft. 12-in. sewer outfall, $2.50 a ft. for each; manholes, $45 each; lampholes, $8 each; Y-branches, 12-in. $1.10, 10-in. 90 cts., and 8-in. 65 cts.; (1) bid of H. A. Allard & Co., Watertown, N.Y.; (2) Thos. Marnell & Co., 228 W. Belden Ave., Syracuse, N. Y.; (3) Clinton Beckwith, Mohawk, N. Y., (his bid for flexible joints is $44 per ton for 12-ft. pipe); (4) W. H. Cookman, Niagara Falls, N.Y.; (5) A. F. Nimms, Philadelphia, N.Y.:

Cast-iron pipe:	1.	2.	3.	4.	5.
4 and 6-in.	$36.25	$40.33	$35.75	$35.00	$35.75
8, 10, 12, and 14-in....	34.85	39.68	34.75	34.00	34.25
Flexible joints: 12-in...	22.70	33.06	44.00	25.00	25.00
14-in.	33.75	54.94	44.00	35.00	37.00
Special castings, a lb...	.035	.035	.04	.03	.05
Hydrants, each	24.15	27.19	25.00	23.75	24.50
4-in. valves	7.10	9.03	8.00	7.90	8.30
6-in. "	11.70	13.97	13.00	12.25	13.50
8-in. "	17.50	20.36	19.00	17.75	20.00
10-in. "	25.00	28.75	28.00	26.00	30.00
12-in. "	31.55	38.23	35.00	34.00	38.00
10-in. check valves.....	30.75	32.20	35.00	30.00	37.00
14-in. check valves.....	61.00	66.70	65.00	60.00	73.00
Valve boxes	3.80	2.87	5.00	3.25	4.50
Earth excavation, a yd..	.49	.37	1.25	.40	.37
Rock excavation, a yd..	4.24	2.25	4.00	3.00	3.00
Laying 4" water pipe.	.28	.12	.07	.10	.24
" 6" " " .	.28	.14	.10	.12	.28
" 8" " " .	.28	.16	.15	.15	.30
" 10" " " .	.28	.22	.17	.18	.33
" 12" " "	.28	.25	.21	.20	.38
Setting hydrants	1.12	1.00	2.00	1.00	2.00
" 4-in. valves....	.50	.50	1.50	1.00	1.00
" 6-in. "	.70	.50	2.00	1.00	1.00
" 8-in. "	.85	.50	2.00	1.00	1.00
" 10-in. "	1.45	.50	3.00	1.00	1.00
" 12-in. "	1.60	1.00	3.00	1.50	1.00
" 10-in. check vive	2.25	1.50	10.00	1.00	1.00
Water tower	4,565	4,500	4,450	4,465	4,400
Pump house	3,796	.....	.....	4,000	.....
Pumps and engines.....	6,100	.....	7,150	.....	.....
Laying 600' intake pipe.	2.75	1,100	3.00	4.00	1,980
Fur. and laid:					
12-in. vit. sewer pipe..	.40	.45	.55	.50	.82
10-in. " " " ..	.32	.36	.40	.35	.73
8-in. " " " ..	.22	.26	.25	.25	.59
Laying 12-in. iron pipe.	.08	.50	2.00	.50	.47
" 8-in. " " .	.80	.41	2.00	.40	.39
" 12" sewer outlet	2.75	1,300	3.00	3.00	2,640
" 12" sewer outlet	2.75	1,800	3.00	3.00	2,508
Manholes (44), each.....	39.00	45.00	35.00	35.00	35.00
Lampholes (36), each...	8.90	5.00	10.00	10.00	10.00
12-in. Y-branches	1.70	1.00	1.75	1.00	....
10-in. "	1.30	.70	1.40	.75	....
8-in. "	.90	.50	1.00	.50	....

WELL DRILLING.—Duquesne, Pa.—Contract let by city to Sanberg & Shaw, Duquesne, for drilling four additional wells at the pumping station at $325 per ft.

GRAVEL ROAD.—Woodbury, Conn.—Chas. S. Curtiss, selectman, writes that the following bids were received on July 18 for constructing about 7,700 ft. of gravel road: F. H. Fagan Co., Derby, 85 cts. per lin ft.; A. Brazos & Sons, Middletown, 69¾ cts.; C. W. Tryon, Meriden, 66 cts.; Standish Stone Co., Bridgeport, 57 cts.; H. S. Jackson, New Haven, 39 cts.

DREDGING.—New Bedford, Mass.—C. M. Cole, Fall River, has received the contract for dredging the docks where the sewers empty at New Bedford, at 29½ cts. per cu. yd.

LEVEE.—Vicksburg, Miss.—Contract let to John Scott & Son, St. Louis, Mo., for $400,000 of new levee work along Holly Brook, La., at 27½ cts. per cu. yd.

DREDGING.—Wilmington, Del.—Bids were opened as follows by U. S. Engineer Sanford on July 13 for dredging in the Susquehanna River, near Havre de Grace, Md.: John L. Mills, Camden, N. J., 15½ cts. per cu. yd.; John L. Gromm, Philadelphia, Pa., 17 cts.; Maryland Dredging & Contracting Co., Baltimore, Md., 19½ cts.

Information concerning contracts to be let or of supplies to be furnished, and corrections of errors and omissions in published items, are invited.

CAST-IRON PIPE.—Sacramento, Cal.—J. C. Pierson, Cy. Surv., writes that the following bids were received July 6 for furnishing cast-iron pipe (awarded Crane Company) and specials (awarded Holbrook, Merrill & Stetson):

Bids Received at Sacramento, Cal., July 6, 1903, for Furnishing C.-I. Pipe and Special Castings.

Bidder.	Cast-iron Pipe. 12-in., 732 tons.	10-in., 100 tons.	8-in., 236 tons.	6-in., 45 tons.	Special casting, 21 tons.	Total.
Crane Company, 25 First St., San Francisco, Cal.	$38.50	$38.50	$38.50	$38.50	$65.00	$44,216
Christian Froelich, 202 Market St., San Francisco, Cal.	41.22	41.22	42.22	42.22	67.50	47,576
Martin Pipe & Foundry Co., San Francisco, Cal.	39.20	39.20	39.20	39.20	63.00	44,953
Holbrook, Merrill & Stetson, Sacramento, Cal.	41.95	41.95	41.95	41.95	59.75	47,945

FILL, ETC.—Portsmouth, O.—The county commissioners opened the following bids on July 7, 1903, for the improvement of the towpath by raising it for a distance of 7,537 ft.: J. A. Kelley, masonry, etc., $4 per cu. yd.; filling, 42 cts. a cu. yd.; W. H. Hudson, filling, 49 cts.; Rarden Stone Co., masonry, etc., $4.50; filling, 75 cts.

LEVEE.—Clarksdale, Miss.—M. J. Roach & Co. has been awarded the contract for the new levee at Star Landing in De Soto county, at 18.32 cts. a cu. yd.; surface clearing, $18 per acre; heavy clearing, $250 per acre, and light clearing, $175; Hugh McCarthy received a contract for Stations 36 and 37, Tunica county, at respectively, 19 cts., $16, $150, and $100.

CAST-IRON PIPE, CASTINGS, ETC.—Buffalo, N.Y.—Following bids received July 9, 1903, for cast-iron water pipe, special castings, valves, hydrants, etc., for the year July 1, 1903, to June 30, 1904; valves, all sizes awarded Rensselaer Mfg. Co., Troy, N. Y.:

Valves.	Rensselaer Mfg. Co., Troy.	Kennedy Valve Mfg. Co., New York.	Michigan Brass & Iron Wks., Detroit.	Whittet, Barrett & Co., Buffalo.
3-in.	$3.75	$3.50	$5.00	$5.80
4-in.	6.20	5.40	6.35	6.80
6-in.	11.00	8.90	10.50	11.20
8-in.	16.00	15.00	16.30	16.80
10-in.	23.50	21.50	24.00	24.00
12-in.	30.00	31.25	34.00	30.40
16-in.	59.00	60.00	65.00	57.20
20-in.	115.00	101.00	120.00	108.65
24-in.	160.00	170.00	180.00	172.80
30-in.	285.00	295.00	315.00	309.75
36-in.	475.00	500.00	500.00	504.00
48-in.	915.00	1,150.00	980.00	1,086.75

For coroporation cocks: A. P. Smith Mfg. Co., Newark, N. J., was recommended for the award, its figures were: ½-in. plugs, 10 cts. each; ⅝-in., 14 cts.; ¾-in., 20 cts.; 1-in., 24 cts.; ½-in. screw cocks, 40 cts.; ⅝-in., 53 cts., ¾-in., 74 cts., 1-in., $1.05; 1½-in., $3.50; 2-in., $5; H. Mueller Mfg. Co., Decatur, Ill., bid for ½-in. plugs, 9 cts.; ⅝-in., 13 cts.; ¾-in., 18 cts.; 1-in., 30 cts.; ½-in. screw cocks, 48½ cts.; ⅝-in., 65 cts.; ¾-in., 88 cts.; 1-in., $1.39; 1½-in., $3.70; 2-in., $6.16. Bingham & Taylor, Buffalo, were recommended for the contract for valve boxes, service boxes, manhole frames and covers and vault covers.——For Cast-iron Pipe and Special Castings, the U. S. Cast-Iron Pipe & Foundry Co., Buffalo, bid $30 per ton, and 3 cts a lb., respectively, and will probably receive the contract. The Camden Iron Works has been recommended for the contract for hydrants. The Michigan Brass & Iron Works also bid.

SEWERS AND CEMENT.—Atlanta, Ga.—R. M. Clayton, Cy. Engr., writes that these bids were submitted July 20, 1903, for cement and constructing sewers; Cement—Caroline Portland Cement Co., Charleston, S. C., 61 cts. per 100 lbs.; Sciple Bros., City, 58 cts.; V. H. Kreigshaber, 62 cts.; For Constructing Sewers (city to furnish cement) (1) bid of Atlantic Construction Co., (2) Venable Bros:

		1.	2.
Brick	1,000,000 a M.	$10.75	$11.25
Brick	3,500,000 "	10.75	11.25
Rubble masonry	2,500 cu. yds.	2.00	1.75
Cut stone	1,000 lin. ft.	1.80	1.25
Flagging	2,000 sq. ft.	.85	.65
Lumber	50,000 ft., B.M.	12.00	13.00
Excavation, 10 ft. deep	5,000 cu. yds.	.31	.30
" 15 " "	15,000 " "	.45	.45
" 20 " "	1,000 " "	.55	.55
" 25 " "	1,000 " "	.65	.65
Concrete	500 " "	2.75	4.00
Concrete	1,481 " "	6.50	4.97

IRRIGATING CONDUIT.—Fort D. A. Russell, Wyo.—Capt. W. S. Scott, Q. M., Cheyenne, received the following bids on July 9 for constructing an irrigating conduit at Fort D. A. Russell; F. L. Joslin's bid for cast-iron pipe is for all, and price for conduit line is per ft.:

Bids Received at Cheyenne, Wyo., July 9, 1903, for Constructing an Irrigating Conduit.

Items.	Holme & Allen.	M. P. Keefe.	S. B. Morrison.	LaPash & Vorhees.	F. L. Joslin.	Bradley & McGarvey.
Furnishing and laying 12-in. vitrified pipe, a lin. ft.	$0.495	$0.48	$0.65	$0.76	.....	$0.60
Excavating and backfilling, a cu. yd.	.825	.45	.72	.79	.....	.50
Furnishing and laying 12-in. cast-iron pipe, a lin. ft.	2.30	3.00	3.00	9.00	$145.00	2.65
Furnishing in place 12-in. gate valve	50.00	60.00	112.50	200.00	75.00	75.00
Shutting off water	27.50	25.00	50.00	250.00	.....	25.00
Making the connections at gate house	82.50	25.00	150.00	300.00	.....	120.00
Constructing conduit line, complete	12,300	8,775	.....	16,490	.95	11,750

ROAD.—Hartford, Conn.—Contract let to H. S. Jackson, New Haven, for constructing 7,700 ft. of gravel road in Woodbury at 39 cts. a lin. ft.

GRADING.—Mankato, Minn.—Board of public works has let contract to Geo. W. Monks for grading Poplar St., at 26½ cts. a yd., and Cherry St., at 24½ cts.; H. A. Hurd bid 27 cts. and 26 cts., respectively.

ASPHALT PAVEMENT.—Oshkosh, Wis.—The Barber Asphalt Paving Co. bid $2.04½ per sq. yd. for asphalt pavement on 6-in. concrete base.

*CEMENT.—New London, Conn.—The following bids were received on July 17 for furnishing 10,000 bbls. of American Portland cement; Hiram Snyder & Co., New York, bid $1.93 a bbl. for Lehigh, and the Commercial Wood & Cement Co., New York, $10.46 for Saylor's brand; (1) price delivered on island docks of 2,000 lbs. of cement; (2) on dock at New London, (3) on cars at New London:

	1.	2.	3.
Vulcanite Prtld Cem. Co., New York	$10.05	$9.70	$8.40[1]
Eastern Clay Goods Co., Boston, Mass.	10.55	10.13	9.82[2]
Atlas Portland Cement Co., New York	10.37	10.37	9.63[3]
Hudson (N.Y.) Portland Cement Co.	9.73	9.73	....[4]
Warner Miller Co., New Haven, Conn.	9.84	....	9.70[5]
F. H. & A. H. Chappell Co., N. London	10.05	9.90	....[3]
Alpha Portland Cement Co., Boston	9.50	9.00	8.95[6]
The Mallory Co., New London, Conn.	9.89	9.89	9.89[6]

Brands of cement: [1]Vulcanite, [2]Northampton, [3]Atlas, [4]Hudson, [5]Alsen's, [6]Alpha.

*DREDGING.—Norfolk, Va.—Capt. E. E. Winslow, U. S. Engrs., received the following bids on July 16 for dredging the harbor at Norfolk; both were rejected: (1) removing 1,350,000 cu. yds. of material; (2) removing trees, etc.; (3) removal, demolition and reconstruction of sidewalks, etc.; (4) reconstruction of wharf, buildings, etc.; (5) repairs to drives and walks: Atlantic Gulf & Pacific Co., New York, (1) 22 cts. per cu. yd., (2) $100, (3) $16,000, (4) $3,000, (5) $600; Coastwise Dredging Co., Baltimore, Md., (1) 13 4-10 cts., (2) $180, (3) $14,800, (4) $4,000, (5) $270.

DITCH.—Minneapolis, Minn.—J. Eichoff has been awarded a contract for the new Solum ditch in Marshall county at 13.9 cts. per cu. yd.

MACADAMIZING.—Napa, Cal.—Geo. Errington awarded contract for macadamizing Coombs St., at $1.05 per lin ft.

PUBLICATIONS RECEIVED.

CHIMNEY DESIGN AND THEORY.—A Book for Engineers and Architects. By William Wallace Christie, M. Am. Soc. M. E. Second Edition, Revised and Enlarged. New York: D. Van Nostrand Co. Cloth; 6 × 9 ins.; pp. 192; 53 illustrations. $3.

ELECTRICAL ENGINEERING.—An Elementary Text-Book Suitable for Persons Employed in the Mechanical and Electrical Trades, for Elementary Students, etc., etc. By E. Rosenberg, Chief Electrical Engineer at Körting Bros., Hanover. Translated by W. W. Haldane and Carl Kinzbrunner, of Manchester, England. New York: John Wiley & Sons. Cloth; 6 × 9 ins.; pp. 267; 263 illustrations. $1.50 net.

THE VENTILATION, HEATING, AND MANAGEMENT OF CHURCHES AND PUBLIC BUILDINGS. By J. W. Thomas. London and New York: Longmans, Green & Co. Cloth; 5 × 8 ins.; pp. 140; 25 illustrations. $1.

DRAINAGE ET ASSAINISSEMENT AGRICOLE DES TERRES (LAND AND AGRICULTURAL DRAINAGE). By L. Faure. Paris: Ch. Beranger. Cloth; 7 × 10 ins.; pp. 279; 4 folding plates and many illustrations in the text. $3.75.

TRADE PUBLICATIONS.

(The standard sizes for pamphlets and trade catalogues recommended by all the principal engineering societies of the United States are: 3½ x 6 ins., 6 x 9 ins., and 9 x 12 ins.)

PENCILS.—Jos. Dixon Crucible Co., Jersey City, N. J. Paper; 6¼ × 3½ ins.; pp. 8; illustrated.

Devoted to the "Eterno" indelible copying pencil.

SWITCHBOARDS.—H. O. S. Engineering Co., 88 Warren St., New York. 6 × 9 ins.; 4-page leaflet.

Panel boards of four types, 2 to 32 circuits, are listed here.

BLOWERS.—American Blower Co., Detroit, Mich. Paper; 6 × 7 ins.; pp. 4.

A list of direct-connected electric motor-driven blowers and exhausters.

EMERY-WHEEL DRESSER.—Standard Tool Co., Cleveland, O. Card; 6 × 4½ ins.

A postal-card advertisement of the "Standard" emery-wheel dresser, a hand tool.

PNEUMATIC TOOLS.—Philadelphia Pneumatic Tool Co., Philadelphia, Pa. Paper; 6 × 6½ ins.; folder.

A rather novel folder; it serves to remind the reader of Keller pneumatic tools.

BOILERS, ENGINES AND MACHINERY.—Wickes Bros., Saginaw, Mich. Paper; 3¼ × 6¼ ins.

A monthly stock list. The issue to hand covers 32 pp. Stock is at New York, Pittsburg and Saginaw.

ELECTRIC GENERATORS.—Crocker-Wheeler Co., Ampere, N. J. Paper; 5 × 7½ ins.; pp. 16; illustrated.

In a rather artistic pamphlet, entitled "The Source of the Electric Light," direct-current generators are discussed.

STEAM ENGINES.—J. H. Gates & Co., Monadnock Block, Chicago. Paper; 6 × 9 ins.; pp. 4; illustrated.

This concern sells Skinner engines, of the horizontal high-speed type, and Williams engines, which are vertical Corliss engines.

VALVES AND GAGES.—Ashton Valve Co., Boston, Mass. Paper; 3½ × 6¼ ins.; pp. 12; illustrated.

Brief description and illustration is combined with price and size lists of pop safety valves, pressure and vacuum gages, and steam whistles.

METAL FURNITURE.—Berger Mfg. Co., Canton, O. Paper; 9½ × 6¼ ins.; pp. 18; illustrated.

Document and paper files, card cases, desks, tables, counters, etc., all made of steel! The catalogue gives an impression of a new style in office furnishing.

GRINDING WHEELS.—Norton Emery Wheel Co., Worcester, Mass. Paper; 3½ × 6 ins.; pp. 16.

This little pamphlet contains a reprint of an article by Mr. C. H. Norton on "Grinding." The article appeared in the "American Machinist" some six months ago.

STEEL PILING.—H. Wittekind Interlocking Metal Piling Co., Room 707, 218 La Salle St., Chicago. Paper, 5½ × 7¼ ins., pp. 4, illustrated.

The piles are built up of plates and structural shapes, and are intended for sheet piling for cofferdams, excavation, etc.

GASKET.—U. S. Indestructible Gasket Co., 8 S. William St., New York. Paper; 5½ × 7 ins.

A postal-card folder advertises metallic gasket for flange joints, manholes, etc. A couple of flyers inclosed show and list Empire pipe wrenches and a combination wrench and plier.

STEAM ENGINES.—Allis-Chalmers Co., Chicago, Ill. Paper; 6 × 4¼ ins.; pp. 189.

This book is a list of users of Reynolds' Corliss engines. It is classified by kind of service and indexed by location. We can do no better than call attention to the number of pages in the book.

OIL BURNERS FOR AUTOMOBILES.—The National Oil Burner & Equipment Co., St. Louis, Mo. Paper, 3½ x 6½ ins., pp. 8, illustrated.

Burners, steam traps and separators, fusible safety valves and other apparatus are described and illustrated. Prices are given.

STEAM SEPARATOR.—Gardner Governor Co., Quincy, Ill. Paper; 3½ × 6 ins.; pp. 8; illustrated.

The Gardner separator, for removing entrained water from steam, contains baffles so arranged as to produce a separating action. It is built in several styles, horizontal or vertical, etc.

SHEET STEEL SPECIALTIES.—W. J. Clark Co., Salem, O. Paper; 6 × 9 ins.; pp. 32; illustrated.

An extensive range of specialties is covered by this catalogue. Steel tote boxes and barrels, steel cabinets, joist hangers, an umbrella stand, and a novel incandescent lamp tray are some of the items.

STEAM TRAPS.—American Blower Co., Detroit, Mich. Paper; 7 × 9 ins.; pp. 16; illustrated.

"Morehead" traps, advertised in this pamphlet, are made in two styles; one which drains the water into a tank or sewer, the other which returns the water to the boiler, against pressure.

ELECTRIC GRINDERS.—Storey Motor & Electric Co., Harrison, N. J. Paper; 7½ × 10 ins.; pp. 18; illustrated.

A high-speed direct-current motor, direct connected to buffing or grinding wheels, and fitted on a suitable stand with control switch, etc., is the subject of this catalogue.

PAINTS FOR METAL WORK.—Joseph Dixon Crucible Co., Jersey City, N. J. Paper, 3½ × 6¼ ins.; pp. 6; illustrated.

Samples of colors are given, with specifications for painting new work and repainting. Half-tone views show some of the structures in which this company's paints have been used.

INDUSTRIAL RAILWAYS.—C. W. Hunt Co., 45 Broadway, New York. Paper; 3½ × 6 ins.; pp. 32; illustrated.

Over half of this booklet is a collection of views, showing the application of industrial railways. The first portion contains explanatory text, which tells why the Hunt system uses outside flanged wheels, etc.

POWDERED FUEL STOKER.—Pulverized Coal Stoker Co., 31 Burling Slip, New York. Paper; 9 × 6¼ ins.; pp. 28; illustrated.

The machine advertised here is a combination of a coal crusher and a blower for spraying the pulverized coal into the furnace. The arguments in its favor (and results of tests) are well presented.

STEEL CLIPS.—H. A. Streeter, 31 Indiana St., Chicago, Ill. Paper; 3½ × 6 ins.; pp. 32; illustrated.

Streeter's well-known clips for steel framing connections give a unique style of construction. The variety of forms now made (as shown in this catalogue) seem to provide for connecting any possible two pieces together where no great stress is to be transmitted.

OIL ENGINES.—De La Vergne Refrigerating Machine Co., New York. Paper; 6 × 9 ins.; pp. 64; illustrated.

Hornsby-Akroyd oil engines are well known. Kerosene is used, and ignition is by the heat of the walls of the vaporizing chamber. A number of illustrations show the range of uses to which this engine has been applied, and testimonials express the satisfaction of users.

ARCHITECTURAL WORK.—By Henry L. Reinhold, Jr., Assoc. A. I. A., 1004 Chestnut St., Philadelphia, Pa. Paper; 12 × 10 ins.; pp. 139; many illustrations.

This is a creditable trade publication, showing many dwellings, churches and business buildings, for which Mr. Reinhold was architect. Nearly a third of the space is taken up with other people's advertisements.

CRANES.—Garry Iron & Steel Co., Cleveland, O. Paper; 7 × 5 ins.; pp. 32; illustrated.

A number of illustrations of small power jib cranes mounted on trucks, which type is coming into extensive use, are included here. Post and other jib cranes, pneumatic, electric and hand power, wheeled jacks, pit jacks (for car barns), hoists, etc., are also shown.

BOILERS AND ACCESSORIES.—See Engineering Co., 1 Broadway, New York. Paper; 6 × 9 ins., 6 × 6½ ins.

The larger pamphlet (4-page) talks of the See water-tube marine boiler, which is constructed either with furnace at one end only, or with furnace at both ends, and for one or two furnaces in either case. The smaller single leaf illustrates the See hydro-pneumatic ash ejector.

Information concerning contracts to be let or of supplies to be furnished, and corrections of errors and omissions in published items, are invited.

ELECTRICAL INSTRUMENTS.—Stanley Electric Mfg. Co., Pittsfield, Mass. Paper; 8 x 10½ ins.

Bulletin No. 135 (of serial catalogue) describes hot-wire voltmeters and ammeters, accessories such as shunts and series transformers; also indicating watt-meters, phase indicators, voltmeter compensators, ground detectors, and static voltmeters. As this pamphlet has 24 pp., it is fairly detailed.

FILTRATION WORKS.—New York Continental Jewell Filtration Co., New York, N. Y. Paper, oblong, 9 x 6 ins., pp. 36, illustrated.

This pamphlet contains an illustrated description of the filtration works of the East Jersey Water Co. at Little Falls, N. J., which have a capacity of 32,000,000 gallons for 24 hours. The methods and results of operation are also included.

STEEL BRIDGES.—Pennsylvania Steel Co., Steelton, Pa. Paper; 9 x 7 ins.; pp. 72; illustrated.

It is a pleasure to see such a carefully executed book as this is. We may regret that it is not bound in something more substantial and protecting than paper. The title of the book, "From Steelton to Mandalay," indicates the distance the reader is carried. The book describes the construction of the great Gokteik viaduct, in Burmah, by the engineers and men of the Pennsylvania Steel Co. A profusion of very artistic half-tone engravings accompanies the descriptive and statistical matter.

PAINT.—Goheen Mfg. Co., Canton, O. Paper; 11 x 8 ins.; pp. 12 and 28; illustrated.

"Galvanum, a paint that will adhere permanently to galvanized iron and steel" is claimed to have proven its permanence in ten years' service. A gallon of "Galvanum" will cover 500 to 550 sq. ft. of surface one coat. The thicker pamphlet refers to "Carbonizing Coating," a general paint for structural iron and steel.

PAINT FOR METAL WORK.—Goheen Mfg. Co., Canton, O. Paper; 8 x 11 ins.; pp. 28; illustrated.

Views are given of office buildings, blast furnaces, smokestacks, bridges, mills, trainsheds, etc., in which the company's "carbonizing coating" has been used. There are also testimonials as to the efficiency of this coating, and a table of the quantity and cost of various paints for bridges of spans of 20 ft. to 300 ft.

GAS ENGINE IGNITER.—Goodson Electric Ignition Co., 43 John St., New York. Paper; 6 x 5 ins.; pp. 16; illustrated.

The igniter here shown is a magneto generator, which is driven from the engine-shaft through a spring connection giving rapid motion for part of a revolution. The time of this action can be adjusted to the desired part of the stroke. The spark plug used in connection with the generator has a movable electrode, which is separated from the fixed electrode by the action of an electromagnet energized by the current from the magneto.

FUEL OIL APPARATUS.—American Crude Oil Burner Co., 713 Market St., San Francisco, Cal. Paper, 6 x 7½ ins., pp. 40, illustrated.

The advantages of oil as a fuel are set forth, and the proper arrangements and apparatus for burning oil are discussed. Views are given of locomotives, stationary boilers and a steam omnibus on which this fuel is used. There are also details of the company's oil burners, oil pumping apparatus, etc.

MILLING MACHINES.—Cincinnati Milling Machine Co., Cincinnati, O. Paper; 6 x 9 ins.; pp. 30; illustrated.

The title, "Examples of Rapid Milling," is a correct representation of the matter here presented. Pictures show the setting of the work and the operation of the tool, and accompanying text gives the data as to the material, work and time, for a large number of pieces of rapid and heavy milling on machines made by this company. The pamphlet represents modern machine-shop work.

RAILWAY WATER SUPPLIES.—U. S. Wind Engine & Pump Co., Batavia, Ill. Paper; 7 x 10 ins.; illustrated.

Water tanks, water columns, hand and pumping outfits, well supplies, pipe and pipe fittings, valves and other specialties are illustrated, described and priced in this catalogue. Detailed drawings of some of these things have been reproduced for the catalogue. Among the handy tables included are several on windmills.

GRAVEL ROAD.

Freehold, N.J., July 17, 1903.

Sealed proposals for building the Manasquan and Belmar Gravel Road, under the provisions of the State Aid Road Laws of New Jersey, and as designated in the plans and specifications, will be received by the Committee of the Board of Chosen Freeholders of the County of Monmouth at the Court House in Freehold, N. J., on Wednesday, the 12th day of August, 1903, at 12 o'clock, noon, and then and there publicly opened. Specifications and information regarding said construction may be had by applying at the County Collector's Office in Freehold, or of W. H. Shafto, Engineer, Villa Park, N. J., or of W. P. Lefferson, Chairman of the Road Committee, Manasquan, N. J.

Each sealed bid must be plainly endorsed, "Proposals to Build the Manasquan and Belmar Gravel Road," and must be accompanied with a certified check for one thousand dollars, payable to the Director of the Board of Chosen Freeholders as a guarantee that if said work is awarded to the bidder he will enter into a written contract and agreement with said Board of Freeholders when thereto required to truly and faithfully perform all of said work according to the plans and specifications; and further, at the same time, will execute and deliver to said Board, his bond in a penal sum of at least the total estimated cost of the work, with two or more freeholders of said county as sureties, to be approved by the director of the Board, conditioned for the faithful performance of said work in strict conformity with the plans and specifications.

The Board reserves the right to reject any and all bids.

JOHN GUIRE,
4-3t Director of Board of Chosen Freeholders.

SUBSIDING AND COAGULATING BASINS.

Richmond, Va., July 18, 1903.

Sealed proposals for the construction of Subsiding and Coagulating Basins, and the work pertaining thereto, will be received here until 5 p.m., Sept. 1, 1903, and then publicly opened.

Information on application. The right to reject any or all proposals is reserved by the Committee on Water. Approximate estimate of work to be done, $300,000.

CHAS. E. BOLLING,
5-3t Superintendent

U. S. ENGINEER OFFICE, 3232 Prytania St., New Orleans, La., July 21, 1903.—Sealed proposals will be received here until 11 a.m., Aug. 20, 1903, for constructing Steel Hull Sternwheel Steamboat, delivered at New Orleans, La. Information on application. CHAS. S. BROMWELL, Capt., Engrs. 4-4t

PROPOSALS FOR GRADING AND ROADS AND WALKS.—Depot Quartermaster's Office, 170 Summer St., Boston, Mass., July 6, 1903.—Sealed proposals, in triplicate, will be received at this office until 11 a. m., Aug. 6, 1903, and then opened in the presence of bidders, for Grading and constructing Roads and Walks at Fort Strong, Long Island, Boston Harbor, Mass. The Government reserves the right to reject any or all bids. Proposals and information furnished on application. Plans and specifications can be seen at this office. Bidders will state time required for the work. A guarantee in the amount of 10% of the bid will be required. Unguaranteed bids will not be considered. Envelopes containing proposals to be marked "Proposals for Grading and Roads and Walks, Fort Strong, Mass.," and addressed to A. M. PALMER, Depot Quartermaster. 2-4t

COUNTY ROAD WORK.

Passaic, N. J.

Separate sealed proposals will be received by the Road Committee of the Board of Chosen Freeholders of the County of Passaic, on Friday, July 31, 1903, at the County Jail, Paterson, N. J., at 8 p. m., for Grading and Macadamizing the following roads and streets in said County of Passaic:

1. Squirrel Woods Road, from West 30th St. to New St., Little Falls Township.
2. East 31st St., from Twelfth Ave. to Market St., Paterson.
3. Barbour Street, from Rip Van Winkle (Belmont) Ave. to the junction of Cedar Cliff Road, Katz Ave. and Hamburg Ave., Manchester Township.
4. Mountain View and Singac Road, from end of present macadam to Paterson and Hamburg Turnpike, Wayne Township.

Specifications and profiles may be seen at the office of the County Engineer, Room 29, Savings Bank Building, Paterson, N. J

A certified check in the sum of $1,000, made payable to the order of E. N. Kevitt, Director of the Board of Chosen Freeholders of the County of Passaic, to accompany each bid, as a guarantee that bidders will enter into contract if awarded.

The right is reserved to reject any or all bids. E. N. KEVITT, Director.
GEO. W. BOTBYL, Clerk. 3-3t

ENGINES, GENERATORS AND SWITCHBOARD.

Cleveland, O., July 29, 1903.

Plans, specifications and sealed proposals will be received at the office of the Secretary of the Board of Public Service, No. 105 City Hall, until 12 o'clock m., Aug. 13th, 1903 for furnishing and installing two Direct-Connected Generator Units with switchboard in the engine house of the Kirtland St. Pumping Station.

Specifications may be seen and blank proposals can be obtained at the office of the Superintendent of Water-Works.

Each proposal must contain the full name of the party or parties making the same, and all persons interested therein, and must be accompanied by a certified check for One Thousand ($1,000) Dollars on a solvent bank in this city, made payable to the Board of Public Service of the City of Cleveland, as surety that if the proposal be accepted a contract will be entered into.

No proposal will be entertained unless made on the blanks furnished by the Superintendent of Water-Works, and delivered at the office of the Secretary of the Board of Public Service, No. 105 City Hall, previous to 12 o'clock m. on the day specified.

The City reserves the right to reject any or all bids.

THE BOARD OF PUBLIC SERVICE,
By W. J. SPRINGBORN, President.
A. R. CALLOW, Secretary. 5-1t

SEWAGE DISPOSAL PLANT.

Baltimore, Md., July 21, 1903.

Proposals, with plans, will be received by the West Arlington Improvement Co. until August 15th, for the installation of a Sewage Plant, to provide for 600 people. For further information, apply to

HENRY F. NEW, Treasurer,
West Arlington Improvement Co.,
5-3t 211 Union Trust Building.

LAYING 22,400 FT. OF WATER PIPE.

Office Board of Public Works,
Grand Rapids, Mich., July 25, 1903.

Sealed proposals will be received at the office of the Board until Aug. 7, 1903, at 3 p.m., for Laying Cast-Iron Water Pipe in quantities as specified below, including valves, specials and hydrants, according to the plans and specifications on file at the office of the City Engineer.

60 ft. 24-in. pipe;	4,634 ft. 8-in. pipe;
768 " 20-in. "	12,132 " 6-in. "
3,000 " 16-in. "	300 " 4-in. "
972 " 12-in. "	

The Board reserves the right to reject any or all bids.

Each bidder shall deposit with his proposal a certified check or certificate of deposit payable to the order of James Keegan, President, in the sum of 5% of his proposal to be forfeited to the City of Grand Rapids in case he shall fail to enter into contract, in accordance with his proposal, should his proposal be accepted by the Board of Public Works.

All proposals must be made upon blanks that will be furnished upon application at the office of the Board. By order of the Board.

JAMES KEEGAN, President.
L. W. ANDERSON, City Engineer.
Attest: JOHN C. BROWN, Clerk. 5-1t

SEALED PROPOSALS will be received at the office of the National Home for Disabled Volunteer Soldiers, 346 Broadway, New York, N. Y., until 12 o'clock M., Tuesday, August 25, 1903, and then opened, for furnishing materials, labor, etc., for the Kitchen Equipment of the General Mess Hall, at the Mountain Branch, N. H. D. V. S., near Johnson City, Tennessee. Plans may be seen, and copies of instructions and specifications, together with blank proposals and other information had upon application to the architect, J. H. Freedlander, 244 Fifth Avenue, New York, N. Y.; to the Superintendent of Construction, Mountain Branch, Johnson City, Tenn.; and to Moses Harris, General Treasurer, 346 Broadway, New York, N. Y. 5-4t

PROPOSALS for Constructing a Water Tower and Lodge at Fort Reno, District of Columbia.—Office of the Commissioners, D. C., Washington, July 29, 1903.—The time for receiving proposals for constructing a Water Tower and Lodge at Fort Reno, D. C., stated in the advertisement of July 15, 1903, as 12 M. August 8, 1903, is extended to the same hour on Aug. 15, 1903. HENRY B. F MACFARLAND, HENRY L. WEST, JOHN RUDDLE, Commissioners, D. C. 5-2t

OFFICE CONSTRUCTING QUARTERMASTER, Cheyenne, Wyo., July 28, 1903.—Sealed proposals, in triplicate, will be received at this office until 2 o'clock p.m. Mountain Time, Aug. 28, 1903, and then opened in the presence of bidders, for the construction of Roads and Walks at Fort D. A. Russell, Wyo. Bidders must state in their proposals the time in which they will complete the work from date of commencement thereof. Each proposal must be accompanied by a guaranty signed by two responsible persons each justifying in a sum equal to 10% of total amount of bid. Full information, blank forms, plans and specifications furnished on application to this office. United States reserves the right to accept or reject any or all bids or any part thereof. Envelopes containing bids to be endorsed "Proposals for Roads, or Walks at Fort D. A. Russell, Wyo.," and addressed to Capt. W. S. SCOTT, Quartermaster, U.S.A., in charge of Construction, Cheyenne, Wyo. 5-4t

U. S. ENGINEER OFFICE, Milwaukee, Wis., July 14, 1903.—Sealed proposals for Moving Cribs, at southerly end of breakwater, Racine Harbor, Wis., will be received here until 3 p.m., Aug. 4, 1903, and then publicly opened. Information furnished on application. J. G. WARREN, Major, Engrs. 3-3t

FOUR MILES PIPE SEWERS.

Gainesville, Ga.

Sealed bids will be received by the Mayor and Council of Gainesville, Ga., at the City Hall, until Aug. 5th, at 3 o'clock p. m., for construction of about four miles of pipe sewers. Plans and specifications can be seen at the City Engineer's office, Gainesville, Ga.

The right is reserved to accept or reject any or all bids. Certified check for five hundred dollars, payable to the City Clerk, must accompany each bid, the same to be forfeited to the City in case the lowest bidder fails to enter into contract. Checks all returned after contract is awarded and entered into.

P. N. PARKER, Mayor.

Specifications may be seen at the office of Engineering News, 220 Broadway, N. Y. 5-1t

SYSTEM OF JETTIES FOR BEACH PROTECTION.

Asbury Park, N.J., July 23, 1903.

Sealed proposals for building a System of Jetties for beach protection at Asbury Park, N.J., will be received at the office of the Secretary of the Public Grounds Commission, 607 Mattison Ave., Asbury Park, N. J., on or before 12 o'clock noon, Saturday, Aug. 8, 1903. Plans and specifications may be seen at any time at the office of the Secretary.

The right to reject any and all bids is reserved. J. L. KINMONTH,
5-1t Secretary.

SEALED PROPOSALS will be received at the office of the National Home for Disabled Volunteer Soldiers, 346 Broadway, New York, N. Y., until 12 o'clock m., Tuesday, Aug. 18, 1903, and then opened, for furnishing materials, labor, etc., for the construction of Four Officers' Quarters, and One Governor's Residence, at the Mountain Branch, N.H.D.V.S., near Johnson City, Tenn. Plans may be seen, and copies of instructions and specifications together with blank proposals and other information had upon application to the Architect, J. H. Freelander, 244 Fifth Ave., New York, N. Y.; to the Superintendent of Construction, Mountain Branch, Johnson City, Tenn.; and to MOSES HARRIS, General Treasurer, 346 Broadway, New York, N.Y. 5-3t

U.S. ENGINEER OFFICE, Charleston, S.C., July 9, 1903.—Sealed proposals for furnishing and delivering about 17,000 cu. yds. Crushed Stone at Charleston, S. C., will be received here until 12 noon, Aug. 3, 1903, and then opened. Information furnished on application. G. P. HOWELL, Capt., Engrs. 3-3t

U. S. ENGINEER OFFICE, Montgomery, Ala., July 25, 1903.—Sealed proposals for Dredging at West Pass entrance to Apalachicola Bay, Fla., and East Pass entrance to Carrabelle Harbor, Fla., will be received here until noon Aug. 12, 1903, and then publicly opened. Information furnished on application. J. B. CAVANAUGH, Capt., Engrs. 5-2t

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For Proposals see pages XXXI., XXXII., XXXII.b of Advertisements and pages 72, 73, of Supplement.

MACADAM ROADS.

SEALED BIDS OR PROPOSALS.

Sussex County, N. J.

Sealed bids or proposals will be received at the Court House, in Newton, New Jersey, on Tuesday, the twenty-fifth day of August, 1903, at 11 o'clock in the forenoon by the Board of Chosen Freeholders of the County of Sussex, for macadamizing the following sections of road, viz:

The public road in the Township of Sparta, in said County of Sussex, leading from the Village of Sparta to the Town of Newton, in said county, and beginning at the westerly end of that part of said public road, which is now being improved under resolution, contract and specification, adopted in the year 1902, as a county road with State aid, and extending one mile from said beginning on the line of the present public road in the direction of said Town of Newton.

And also the public road leading from the Town of Newton, aforesaid, to the Village of Andover, in said County of Sussex, and beginning on the line between said Town of Newton and the Township of Andover, for the distance of two miles toward Andover.

And also the public road leading from the Village of Stillwater, in said County of Sussex, to East Stillwater, along the Paulins Kill, beginning in said public road opposite the blacksmith shop in said village of Stillwater, and extending along said public road for the distance of one mile toward East Stillwater.

And also the public road leading from Warwick, in the State of New York, through the Village of Vernon, in the County of Sussex, to McAfee, in said Township of Vernon, beginning opposite the residence of Ira Drew, in said Township of Vernon, and extending through the Village of Vernon towards McAfee, aforesaid, a distance of two miles.

And also the public road leading from Lafayette to Franklin Furnace, in said County of Sussex, by the way of North Church, beginning on said public road where the line between the Township of Sparta and the Township of Hardyston crosses the same near what is known as Monroe Corner, and extending toward Franklin Furnace, a distance of two miles.

And also the public road leading from the Borough of Sussex, in said County of Sussex, and beginning on said public road at the westerly terminus of that part of said road which is now being improved under resolution, contract and specification adopted by this Board in the year 1902, and extending along said highway towards Newton a distance of one mile.

And also the public road leading from Stanhope to the Town of Newton, in said County of Sussex, beginning at the northerly terminus of that part of said road that is now being improved under resolution, contract and specification adopted by this Board in the year 1902, and extending along said highway towards Newton a distance of one mile and that part of the public road leading from the county line between the counties of Morris and Sussex, through the village of Stanhope, to Newton, be top-dressed with crushed stone from said county line to the southerly end of that part of said public road that is now being improved by resolution, contract and specification adopted by the Board of Freeholders of the County of Sussex in the year 1902.

And also the public road leading from what is known as Tuttles Corner, in the Township of Sandyston, and extending toward Layton, in said Township, for a distance of one-half mile.

And also the public road leading from Tri-States in the County of Orange, and State of New York, through what is known as Tappentown, in the Township of Montague, in said County of Sussex, and beginning at the State line between the State of New York and State of New Jersey, where the same crosses said highway, and extending along said public road leading to Hainesville, in said County of Sussex, by what is known as the Clove road, a distance of one mile from said State line.

Be improved under and by virtue of the provisions of an act entitled, "An act to provide for the permanent improvement of public roads in this State," approved April 1, 1903.

The maps, profiles and specifications may be found at the office of A. H. Konkle, County Engineer, Newton, N. J., or in his absence, at the office of L. J. Martin, County Attorney; where information may be secured and blank bids and bonds obtained.

Each bid must be accompanied by a bond in $1,000 with satisfactory surety conditioned that if the contract shall be awarded the bidder, he will, when required by the Board, execute an agreement in writing to perform the work according to the specifications, and a bond in at least the contract price, to faithfully perform the work.

Bidders submitting bids on more than one of the above mentionel roads or sections of roads shall enclose the same in separate envelopes with the name of the road or section for which the same is submitted, and also the name of the bidder endorsed thereon. Noncompliance with this provision shall result in the rejection of the bid as informal.

The stone to be used shall be of the best native loose rock or stone.

The stone shall be crushed and properly screened and graded.

Bids must be for completed work, including all materials.

No bids shall be withdrawn.

The price must be written in the bids and stated in figures.

Bids must be accompanied by the name and residence of the bidder.

Informal and "unbalanced" bids will be rejected. Bids will be rejected as informal that do not cover and include all the work completed, including the necessary and proper preparation for the foundation of the roadbed and such grading as may be called for in the contract and specifications and on the maps and profiles.

Bidders must satisfy themselves by personal examination or otherwise, of the nature and extent of the work, the width, length and depth of cuts and fills, the size and quantity of drain pipe and the width, depth and extent of the gutters, and shall not at any time after the submision of a bid, dispute or complain of errors in estimates or assert that there was a misunderstanding in regard to the excavations or fills, the work to be done, or the materials furnished.

The right is reserved to increase or diminish the cuts and fills along the line of the work.

The right to reject all bids is especially reserved.

The right to return all bids relating to any one of the above mentioned roads before the same are opened by the committee is hereby expressly reserved.

EMMET H. BELL,
Director of the Board of Chosen Freeholders.
Sussex County, New Jersey. 5-4t

WATER-WORKS.

The City of Winston, N. C.

Masonry, and Earth Embankment Dam. Clear Water Basin; 9,000 ft. each of 12-in. and 10-in. Water Main; Stand-Pipe, 25 × 75 ft.

Sealed bids will be received by the Water Committee of the City of Winston, N. C., until 2 o'clock on the 14th day of August, 1903, at which time all bids will be publicly opened, in the office of the Mayor.

For the construction of a Rubble Masonry and Earth Embankment Dam, containing about 1,100 cu. yds. of masonry and 4,000 cu. yds. of packed embankment.

For the construction of a Clear Water Basin, requiring about 7,000 cu. yds. packed embankment and 9,000 sq. yds. of concrete 6 ins. thick.

For the Trenching for and Laying 9,000 lin. ft. each of 12-in. and 10-in. Water Main.

For the construction of a Stand-Pipe 25 ft. in diameter and 75 ft. high.

Contractors will bid for each—the Dam, the Clear Water Basin and Pipe Line separately.

Each bid must contain the full name of every person or company interested in the same, and be accompanied by a bond to the satisfaction of the Committee, or a certified check on some solvent bank in the sum of $300 as a guarantee that if the bid is accepted a contract will be entered into and its performance properly secured. Should any bid be rejected such bond or check will be promptly returned to the bidder and should any contract be entered into said bond or check will be returned upon the signing of the same.

The right is reserved to reject any and all bids. Information upon application to the City Engineer, to whom all bids must be directed.

JAS. K. NORFLEET, Chairman.
F. J. LIIPFERT,
GEO. T. BROWN,
ROBT. P. HENRY, Committee.
City Engineer. 5-2t

STEEL HIGHWAY BRIDGE.

Office of Supervisors,
Alexandria County, Va.

Sealed proposals shall be received at this office until 10 o'clock a. m., Aug. 10, 1903, for constructing a Steel Highway Bridge over Four Mile Run, on the Seminary Road. For information, address

GEO. E. GARRETT,
5-2t St. Elmo, Alexandria Co., Va.

2,500 LIN. FT. OF PAVING.

Canonsburg, Pa., June 25, 1903.

Sealed proposals for the Grading, Paving, Curbing, and otherwise improving East College St., about 2,500 ft., part of the 3½ miles to be let, of the Borough of Canonsburg, Washington county, Pa., will be received until Monday, Aug. 10, at 7:30 p. m., at which time proposals will be opened and read. Check, $1,000; bond, one-half of estimated amount.

Plans may be seen at Council Chamber and specifications and form of proposals obtained from Borough Clerk. Council reserves the right to reject any and all bids.

R. H. COULTER,
President of Council.
GEO. C. McPEAKE, Clerk.
O. K. TAYLOR, JR., Borough Engineer. 5-1t

45,993 YDS. OF PAVING.

Sidney, O., July 22, 1903.

Sealed proposals will be received at the office of the Board of Public Service of Sidney, O., until 12 o'clock noon on the 17th day of August, 1903, for furnishing all materials and labor necessary for the construction of approximately 45,993 sq. yds. of Brick Asphalt, Bituminous Macadam, or Asphalt Block Paving, together with the necessary curbing, drainage, etc., on Main Ave., Ohio Ave., Poplar St., and Court St., between certain points.

Each bid must be accompanied by a certified check for $1,500 as a guarantee of good faith on the part of the bidder.

Forms of proposals, plans, specifications, etc., on file at the office of the Board of Public Service, and at the office of Riggs & Sherman, Engineers, Toledo, O.

The right is reserved to reject any or all bids.

CHAS. ABBOTT,
President.
RIGGS & SHERMAN, Engineers. 5-1t

DOUBLE DECK STEEL BRIDGE.

Kansas City, Kan., July 23, 1903.

Sealed proposals for furnishing and erecting a Double-deck Steel Bridge across the Kansas River, on Central Ave. in Kansas City, Kan., will be received simultaneously at 12 o'clock noon, Aug. 31st, 1903, and forthwith opened by the Board of County Commissioners of Wyandotte county, Kan., at the office of the County Clerk in the Court House of said county, in Kansas City, Kan. Plans, specifications and forms for submitting bids will be on file in the office of said County Clerk on and after Aug. 1st, 1903. The contract will be awarded to the lowest responsible bidder, but the right to reject any and all bids is reserved, if the Board deems the proposals too high, or for any other reason. Each bid must be accompanied by a certified check for $50, payable to F. M. Holcomb, County Clerk, to be forfeited in case the successful bidder fails to enter into the contract.

By order of the Board of County Commissioners, Wyandotte county, Kan.

[Seal.] F. M. HOLCOMB,
5-5t County Clerk.

U. S. ENGINEER OFFICE, Custom House, New Orleans, La., July 3, 1903.—Sealed proposals for constructing Lock Gates, Plaquemine, La., will be received here until 12 m., Aug. 3, 1903, and then publicly opened. Information furnished on application. H. M. ADAMS, Lieut.-Col., Engrs. 2-4t

U.S. ENGINEER OFFICE, 2001 I St., N.W., Washington, D. C., July 11, 1903.—Sealed proposals for Dredging in Potomac River, D. C., will be received here until 12 m., July 31, 1903, and then publicly opened. Information furnished on application. CHAS. J. ALLEN, Lieut.-Col., Engrs. 3-3t

TREASURY DEPARTMENT.—Office of the Supervising Architect, Washington, D. C., July 16, 1903.—Sealed proposals will be received at this office until 3 o'clock p. m., on the 19th day of August, 1903, and then opened for the Low-pressure Steam Heating apparatus complete in place, for the U. S. Court House, Post Office and Custom House at Newport, Vt., in accordance with drawings and specifications, copies of which may be had at this office or at the office of the Superintendent at Newport, Vt., at the discretion of the Supervising Architect. JAMES KNOX TAYLOR, Supervising Architect. 4-2t

WATER-WORKS PUMPING PLANT.

Sioux Falls, S. D., July 27, 1903.

Sealed bids will be received by the Board of Water Commissioners of the City of Sioux Falls, S. D., until 2 o'clock p. m. on the 22d day of Aug., 1903, for the furnishing and installation of a Municipal Water-Works Pumping Plant, consisting of one 3-million-gallon high-duty pumping engine, one 3-million-gallon compound duplex pump, three 66 ins. × 16 ft. boilers or their equivalent, and all appurtenances necessary for a complete plant.

Separate bids may be made for pumps and boilers.

Each bid must be accompanied by a certified check made payable unconditionally to the order of the City Treasurer of the City of Sioux Falls, S. D., as a guarantee of good faith, said check to be in the sum of $1,000 for a bid on the pumps and $500 for a bid on the boilers, or $1,500 for a bid on the entire work.

Plans and specifications may be seen and blank proposals obtained, after Aug. 5th, at the office of the Secretary in Sioux Falls, at the office of Loweth & Wolff, Civil Engineers, First National Bank Bldg., St. Paul, and at the Engineering News office, Monadnock Bldg., Chicago.

The right is reserved to reject any or all bids.

W. R. MARSHALL,
5-3t Secretary Board Water Commissioners.

BRIDGE.

NOTICE OF RECEPTION OF PROPOSALS FOR RIVER BRIDGE IN THE CITY OF BINGHAMTON, N. Y.

Binghamton, N. Y., July 28, 1903.

Notice is hereby given that the City of Binghamton will receive up to Aug. 18th, 1903, at 5 o'clock p. m., proposals for the erection complete of the superstructure and repairs to substructure of a bridge across the Susquehanna River on Rockbottom St., in the City of Binghamton, N. Y. According to the plans and specifications therefor prepared by the City Engineer of said city and filed with the City Clerk, the entire work will be awarded together to one bidder. Bids for either substructure or superstructure separate will not be considered, but in making proposals therefor bidders must conform to the form proposal which will be furnished upon application to the City Clerk. The bidder to whom the work shall be awarded will be required to enter into contract with the city therefor and to give at the time of entering into such contract a bond in the sum of $10,000, conditioned for the faithful performance of the contract in all its parts, with two sureties, residents of the State of New York, or a surety company duly authorized to execute such bonds within the State of New York, said surety or sureties to be approved by the Mayor of said city. Each proposal must be sealed and marked "Proposal for construction of a Bridge for the City of Binghamton," and be addressed to I. C. Hull, City Clerk. With each proposal must be a certified check or New York draft for the sum of $2,000, payable to the order of I. C. Hull, City Clerk, which check or draft shall be held as a guaranty that the party to whom the work is awarded will enter into contract therefor and give the bond required. The city reserves the right to reject any or all bids.

I. C. HULL,
5-2t City Clerk.

PROPOSALS FOR THE CONSTRUCTION of Section B of the B St. and New Jersey Avenue Trunk Sewer.—Office of the Commissioners, D. C., Washington D. C., July 16, 1903.—Sealed proposals will be received at this office until 12 o'clock m., Aug. 29, 1903, for constructing Section B of the B St. and New Jersey Ave. Trunk Sewer in the District of Columbia, viz.: 1,125 ft. of 15' 0" × 17' 0" sewer, and 1,425 ft. of 14' 0" × 15' 0" sewer. Form, Specifications and necessary information may be obtained at this office. HENRY B. F. MACFARLAND, HENRY L. WEST, JOHN BIDDLE, Commissioners D. C. 4-5t

IN PREPARATION

Rock Excavation—Methods and Cost

By H. P. GILLETTE

AUTHOR OF "EARTHWORK AND ITS COST"

ADVERTISERS' CLASSIFIED DIRECTORY.

CONTINUED ON PAGE 159.

Agencies.
Moore, J D, 45 Liberty st, New York
Air Brakes.
Westinghouse Air Brake Co, Pittsburg, Pa
Air Compressors.
Allis-Chalmers Co, Home Ins bldg, Chicago
American Air Compressor Wks, 26 Cortlandt st, N Y
American Well Works, Aurora, Ill
Blake, Geo F, Mfg Co, 91 Liberty st, New York
Chicago Pneumatic Tool Co, Fisher bldg, Chicago
Christensen, N A, 1212-17 Herman bldg, Milwaukee
Clayton Air Compressor Works, 114 Liberty st, N Y
Contractors' Equip Co, 447 W 5th st, Kansas City, Mo
d'Auria Pumping Engine Co, Drexel bldg, Phila
Fairbanks, Morse & Co, Chicago
General Pneumatic Tool Co, Montour Falls, N Y
Gray-Blaisdell Co, Bradford, Pa
Guild & Garrison, So 10th st, Brooklyn, N Y
Ingersoll-Sergeant Drill Co, 26 Cortlandt st, N Y
Laidlaw-Dunn-Gordon Co, Cincinnati O
McGowan, John H, Co Cincinnati, O
McKiernan Drill Co, 170 Broadway N Y
Minneapolis Steel Mach'y Co, Minneapolis, Minn
Norwalk Iron Works, So. Norwalk, Conn
Rand Drill Co, 128 Broadway, New York
Southwark Foundry & Machine Works, Philadelphia
Stilwell-Bierce & Smith-Vaile Co, Dayton, O
Sullivan Machinery Co, 135 Adams st, Chicago
Vulcan Iron Works, Wilkesbarre, Pa
Air Drill.
Columbus Pneumatic Too Co, Columbus, Ohio
Contractors' Equip Co, 447 W 5th st, Kansas City, Mo
Air Hose Couplers
Clark Co. W J, Salem, Ohio
Aluminum
Pittsburg Reduction Co, Pittsburg, Pa
Annealing Boxes.
McNeil, Jas, & Bro, 29th & Railroad sts, Pittsburg, Pa
Artesian Wells.
Bacon Air Lift Co, 100 Broadway, New York
Cole Bros, 102 Fulton st, New York
Conlan, P H & J, Newark, N J
Cook Well Co, St. Louis, Mo.
Gregory, Elisha, 123 Liberty st, New York
Phillips & Worthington, 11 Broadway, New York
Stothoff Bros, Flemington, N J
Williams Bros, Ithaca, N Y
Artesian Well Tools and Supplies.
Star Drilling Mach Co, 104 Fulton st, New York
Asphalt.
Commercial Asphalt Co, 11 Broadway, New York
Sicilian Asphalt Paving Co, Times bldg, New York
Warren Bros Co, 93 Federal st, Boston
Asphalt Machinery.
Cummer, F D. & Sons, Cleveland, O
Erie Machine Shops, Erie, Pa
Iroquois Iron Works, Buffalo, N Y
Batteries (Storage).
Coho & Co, H B, 114 Liberty st, New York
Bearings (Ball and Roller.)
Ball Bearing Co, 2322 Market st, Philadelphia
Bantam Mfg Co, Bantam, Conn
Standard Roller Bearing Co, Philadelphia
Bearings (Oilless)
North American Metaline Co, Long Island City, N Y
Balances. (Assay and Analytical.)
Ainsworth, Wm. & Sons, Denver, Colo
Belt Dressing.
Dixon, Jos., Crucible Co. Jersey City, N J
Main Belting Co, 1219 Carpenter st, Philadelphia
Belting (Canvas.)
Main Belting Co, 1219 Carpenter st, Philadelphia
Belting (Chain)
Aultman Co, Canton, O
Jeffrey Mfg Co, Columbus, O
Link Belt Engineering Co, Nicetown, Philadelphia
Belt Lacing. (Steel.)
Bristol Co, Waterbury, Conn
Blast Furnaces.
Girard Boiler & Mfg Co, Girard, O
Means & Fulton Iron Works, Birmingham, Ala
Petroleum Iron Works Co, Pittsburg, Pa
Riter-Conley Mfg. Co, 55 Water st, Pittsburg, Pa
Blocks and Sheaves.
American Hoist & Derrick Co, St Paul, Minn
Boston & Lockport Blk. Co, 160 Commercial st, Boston
Hunt, C W Co, Richm'd Terrace, W N Brighton, S I
Macomber & Whyte Rope Co, 21 S. Canal st, Chicago
Yale & Towne Mfg Co, 9-13 Murray st, New York
Blowers.
American Blower Co, Detroit, Mich
Connersville Blower Co, Connersville, Ind
Mass. Fan Co, Waltham Mass
Roots, P H & F M Co, Connersville, Ind
Sturtevant, B F Co, Boston, Mass
Blue Printing Apparatus.
Elliott Electric Blue Print Co, Pittsburg.
Emerson Mfg. Co, F W, Rochester, N Y
Keuffel & Esser Co, 127 Fulton st, New York
Pittsburg Blue Print Co, 1505-C Park bldg, Pittsburg
Soltman, E G, 123 E 42d st, New York
Spaulding Print Paper Co, 44 Federal st, Boston
Blue Print Paper.
Elliott Electric Blue Print Co, Pittsburg
Keuffel & Esser, 127 Fulton st, New York
Soltman, E.G., 123 E 42d st, New York
Spaulding Print Paper Co, 44 Federal st, Boston
(see also Instruments, Engineering, etc.)
Boiler Supplies.
Glasgow Iron Co, Pottstown, Pa
Parson Mfg Co, 320 Broadway, N Y
Boilers.
Allis-Chalmers Co, Home Ins bldg, Chicago
Bacon, Earle C, 26 Cortlandt st, New York
Columbiana Boiler Co, Columbiana, Ohio
Du Bois Iron Works, Du Bois, Pa
Enterprise Boiler Co, Youngstown, O
Fairbanks, Morse & Co Chicago
Gem City Boiler Co, Dayton, O
Girard Boiler & Mfg Co, Girard, O
Hodge Boiler Works, East Boston, Mass
Iroquois Iron Works, Buffalo, N Y
Kingsford Foundry & Machine Works, Oswego, N Y
Leffel, Jas. & Co, Springfield, Ohio
Lidgerwood Mfg Co, 96 Liberty st, New York
Morris Machine Works, Baldwinsville, N Y
McNeil, Jas. & Bro, 29th & Railroad sts, Pittsburg
Means & Fulton Iron Works, Birmingham, Ala
Mundy, J S, Newark, N J
Petroleum Iron Wks Co, Washington, Pa
Rawson & Morrison Mfg Co, Cambridgeport, Mass
Riter-Conley Mfg Co, 55 Water st, Pittsburg, Pa
Sharon Boiler Works, Sharon, Pa
Sullivan Machinery Co, 135 Adams st, Chicago
Variety Iron Works Co, Cleveland, Ohio
Warren City Tank & Boiler Works, Warren, O
Boilers (Water Tube.)
Babcock & Wilcox Co, 29 Cortlandt st, New York
Harrison Safety Boiler Wks, 3166 N 17th st, Phila
Keeler, E, Co, Williamsport, Pa
Bolt Clippers.
Heiwig Mfg Co, St. Paul, Minn
Bolts. (Expansion.)
Church, Isaac, Toledo, O
Steward & Somaine Mfg Co, 120 N 8th st, Phila
Boots and Shoes.
Putman, H J, & Co, 38 Bridge sq, Minneapolis
Brakes.
Brill, J G Co, Philadelphia, Pa
(see also Air Brakes.)
Brass Rolling Machinery.
Poole, Robert, & Son Co, Baltimore, Md
Brick.
Dickey, W S, Clay Mfg Co, Kansas City, Mo
Egyptian Silica Brick Process Co, Fredericksburg, Va
Jackson, John H, Albany, N Y
Johnsonburg Vit Brick Co, Johnsonburg, Pa
Mack Mfg Co, New Cumberland, West Virginia
McAvoy Vit Brick Co, 1345 Arch st, Philadelphia
Purington Paving Brick Co, Galesburg, Ill
Robinson Clay Product Co, Akron, O
Tomkins, Calvin, 120 Liberty st New York
Western Brick Co, Danville, Ill
Brick. (Fire.)
Maurer Henry, & Son, 422 E 23d st, New York
New York Pottery Co, 12th ave & 36th st, N Y
Robinson Clay Product Co, Akron, O
Syracuse Stoneware Co, Syracuse, N Y
Brick Bond
Union Brick Bond Co, Pittsburg, Pa
Brick Machinery.
Bonnot Co, Canton, Ohio
Drake, C T, 300 W Jackson Boulevard Chicago
Miracle Pressed Stone Co, Sioux Falls, S. Dak
Bridge (Concrete).
Abertnaw Construction Co, Boston, Mas
Bridge Operating Machinery.
Edwards, Jos. & Co, 414 Water st, New York
Vulcan Iron Works, Chicago
Bridge Railings.
Albree, Chester B, 14-30 Market st, Allegheny, Pa
Belmont Iron Works, Philadelphia, Pa
King Bridge Co, Cleveland, O
Massillon Bridge Co, Massillon, Ohio
Stupp Bros. Bridge & Iron Co, St. Louis, Mo
Bridges and Buildings.
American Bridge Co, New York
Baltimore Bridge Co, Bush st & B&O R R, Baltimore
Bellefontaine Bridge & Iron Co, Bellefontaine, Ohio
Berlin Construction Co, Berlin, Conn
Boston Bridge Works, 47 Winter st, Boston, Mass
Champion Bridge Co, Wilmington, Ohio
Chicago Bridge & Iron Co, Chicago
Clinton Bridge & Iron Works, Clinton, Iowa
Columbia Bridge Co, Pittsburg
Concrete-Steel Engineering Co, Park Row bldg N
Easton Foundry & Machine Co, Easton, Pa
Eichleay, Jr., & Co., John, Pittsburg, Pa
Fort Pitt Bridge Works, Pittsburg, Pa
Garry Iron & Steel Co, Coe and Lake sts, Cleveland
Joliet Bridge & Iron Co, Joliet, Ill
Kenwood Bridge Co, First Nat. Bank bldg, Chicago
King Bridge Co, Cleveland, Ohio
Massillon Bridge Co, Massillon, Ohio
McClintic-Marshall Construction Co, Pottstown, Pa
Minneapolis Steel Machinery Co, Minneapolis, Minn
Mo. Valley Bridge & Iron Works, Leavenworth, Kan
Mount Vernon Bridge Works, Mount Vernon, Ohio
New Castle Bridge Co Indianapolis
New England Structural Co, Boston, Mass
Parker, T A, 202-208 North First st, Terre Haute Ind
Passaic Rolling Mill Co, Paterson, N J
Penn Bridge Co Beaver Falls, Pa
Pennsylvania Steel Co, Steelton, Pa
Phoenix Bridge Co. Phoenixville, Pa
Puget Sound Bridge & Dredging Co, Seattle, Wash
Riter-Conley Mfg Co, 55 Water st, Pittsburg, Pa
Rogers Iron Co, Springfield, O
San Francisco Bridge Co, 230 Market st, San Franc
Scaife, W B, & Sons Co. Pittsburg, Pa
Seattle Bridge Co, Seattle, Wash
Shoemaker, Lewis F, & Co, Harrison bldg, Pa
Standard Bridge Co, Omaha
Strobel, C L, Monadnock block, Chicago, Ill
Stupp Bros. Bridge & Iron Co, St. Louis, Mo
Vale & Young, Baltimore, Md
Variety Iron Works Co, Cleveland, Ohio
Virginia Bridge & Iron Co, Roanoke, Va
Wabash Bridge & Iron Works. Wabash, Ind
Youngstown Bridge Co, 320 Broadway, New York
Bridges (Rolling Lift.)
Scherzer Rolling Lift Bridge Co, Chicago
Buckets (Automatic.)
Brown Hoisting Machinery Co, Cleveland
Hayward Co, 97 Cedar st, New York
Hunt, C W, Co, Richmond Terrace, W N Brighton, NY
Stuebner, G L, Long Island City, N Y
Union Iron Works, Hoboken, N J
Buckets (Elevator).
Clark Co, W J, Salem, Ohio
Building Blocks (Concrete)
Miracle Pressed Stone Co, Sioux Falls, S. Dak
Palmer Hollow Concrete Bldg Block Co, Wash, D C.
Bumping Posts.
McCord & Co, 1445 Old Colony bldg, Chicago
Mechanical Mfg Co, Chicago
Bunkers (Suspension.)
Berquist, A S, 515 Bedford ave, Brooklyn, N Y
Burners (Oil.)
Hammel, C A 120 Fifth st, Los Angeles, Cal
Petroleum Iron Works Co, Pittsburg, Pa
Cableways (Suspension.)
Bacon, Earle C, 26 Cortlandt st, New York
Beatty M, & Sons, Welland, Ont
Broderick & Bascom Rope Co, St. Louis
Carson Trench Machine Co, 19 Dorrance st, Boston
Flory, S, Mfg Co, Bangor, Pa
Lambert Hoisting Engine Co, Newark, N J
Leschen, A, & Sons Rope Co, St. Louis
Lidgerwood Mfg Co, 96 Liberty st, New York
Macomber & Whyte Rope Co, 21 S. Canal st, Chicago
N. J. Foundry & Machine Co, 9 Murray st, N Y
Trenton Iron Co, Trenton, N J
United Telpherage Co, 20-22 Broad st, New York
Calking Yarn and Tools.
Ogden, J. Edward. Co, 149 Cedar st, New York
Car Couplers.
McConway & Torley Co Pittsburg, Pa
Railroad Supply Co. Bedford bldg, Chicago
Car Heating and Lighting.
Brill Co, J G, Philadelphia, Pa
Safety Car Heating & Lighting Co, 160 B'way, N Y
Car Trucks.
Brill, Co, J G Philadelphia, Pa
Car Wheels.
Brill Co, J G, Philadelphia, Pa
Cayuta Wheel & Foundry Co, Sayre, Pa
Ramapo Iron Works, Hillburn, N Y
Cars (Dump, Plantation, Flat, Hand, Logging Mining and Freight.)
Apex Equipment Co, 11 Broadway, New York
Austin, P C, Mfg Co, Harvey, Ill
Brill, J G. Co, Philadelphia, Pa
Commercial Ky Equipment Co, 120 Liberty st, N Y
Continental Equipment Co, 5-17 Battery Place, N Y
Fairbanks, Morse & Co, Chicago
Goldsby Auto. Car Co, Chemical bldg, St. Louis
Koppel, Arthur, 68 Broad st, New York
National Drill & Mfg Co, 159 La Salle st, Chicago
Pressed Steel Car Co, Pittsburg, Pa
Ramapo Iron Works, Hillburn, N Y
Standard Steel Car Co, Frick bldg, Pittsburg
Steubner, G L, 176 Third st, Long Island City, N Y
Western Wheeled Scraper Co, Aurora, Ill
Wonham-Magor Eng Wks, 29 Broadway, New York
Cars (Narrow Gage.)
Brill, J G Co, Philadelphia, Pa
Hunt, C W, Co, Richmond Terrace, W N Brighton, N Y
Koppel, Arthur, 68 Broad st, New York
Western Wheeled Scraper Co, Aurora, Ill
Wonham-Magor Eng. Wks, 29 Broadway, New York
Cars (Passenger & Freight.)
Brill, J G, Co, Philadelphia, Pa
Koppel. Arthur, 68 Broad st, New York
Cars (Wrecking & Ditching.)
Bucyrus Co, S. Milwaukee, Wis
Case Mfg Co, Columbus, O
Osgood Dredge Co, 37 State st, Albany N Y
Castings (Brass.)
Campbell, J B, Brass Works, Cascade st, Erie Pa
Castings (Iron.)
Builders Iron Foundry, Providence, R I
Brooks, T H, & Co, Cleveland, O
Coldwell-Wilcox Co, Newburg, N Y
Columbia Machine Works, 217 Chestnut st, Brooklyn
Dimmick Pipe Co, Birmingham, Ala
Donaldson Iron Co, Emaus, Pa
Drummond, M J, & Co, 192 Broadway, New York
Du Bois Iron Works, Du Bois, Pa
Easton Foundry & Machine Co, Easton, Pa
Fox, John & Co, 233 Broadway, N Y
Massillon Iron & Steel Co, The Rookery, Chicago
Millar, Chas, & Son Co, Genesee st, Utica, N Y
Poole, Robert, & Son Co, Baltimore, Md
Reading Foundry Co, Ltd, Reading, Pa
Sessions Foundry Co, Bristol, Conn
Variety Iron Works Co, Cleveland, O
Warren Foundry & Machine Co, 160 Broadway, N Y
(see also Sewer and Street Castings)
Cement (Portland.)
Alpha Portland Cement Co, Easton, Pa
Alsen's Am Portland Cement Wks, 48 Broadway, N Y
American Cement Co, 22 S 15th st, Philadelphia, Pa
Atlas Portland Cement Co, 30 Broad st, New York
Buckeye Portland Cement Co, Bellefontaine, Ohio
Coplay Cement Mfg Co, 1123 Broadway, N Y
Empire Portland Cement Co. Warners, N Y
Fredenburg & Lounsbury, Metropolitan bldg, N Y
French, Samuel H, & Co, Philadelphia
General Supply & Construct'n Co, 8-10 Bridge st, N
Glens Falls Portland Cement Co, Glens Falls, N Y
Hartranft, Wm G, Cement Co, Philadelphia
Helderberg Cement Co, Albany, N Y
Illinois Steel Co, Rookery, Chicago
Kelley Island Lime & Transport Co, Cleveland, Ohio
Lawrence Cement Co, 1 Broadway, New York
Lehigh Portland Cement Co, Allentown, Pa
Sinclair & Babson, 45 Broadway, New York
Snyder, Hiram, & Co, 229 Broadway, New York
St Louis Portland Cement Co, St Louis
Thorn Cement Co, 112 Church st, Buffalo, N Y
Vulcanite Portland Cement Co, 160 Fifth ave, N Y
Warner, Chas, Co, Wilmington, Del
Cement (Rosendale.)
Consolidated Rosendale Cem. Co, 26 Cortlandt st, N Y
Coplay Cement Mfg Co, 1123 Broadway, N Y
Cumberland (Md.) Cement & Mfg Co, P O Box 264
Meacham & Wright, Chamber of Commerce, Chicago
Milwaukee Cement Co, Milwaukee, Wis
Snyder, Hiram, & Co, 229 Broadway, New York
Tomkins, Calvin, 120 Liberty st, New York
Union Akron Cement Co, 141 Erie st, Buffalo, N Y
Western Cement Co, Louisville, Ky
Cement Kilns and Machinery.
Allis-Chalmers Co, Home Ins bldg, Chicago
Bartlett, C O, & Snow Co, Cleveland, Ohio
Bonnot Co, Canton, Ohio
Bradley Pulverizer Co, 92 State st, Boston, Mass
Clark, J C, Box 525, Atlanta, Ga
Dodge Mfg Co, Mishawaka, Indiana
Kent Mill Co, 170 Broadway, New York
Jeffrey Mfg Co, Columbus, Ohio
Smidth, F L, & Co, 60 Maiden Lane, New York
Sturtevant Mill Co. 108 Clayton st, Boston
Vulcan Iron Works, Wilkesbarre, Pa
Cement Mixer.
Alexander Iron Works, Syracuse, N Y
Chain Blocks.
Yale & Towne Mfg Co, 9-13 Murray st, New York
Chains.
Newhall Chain Forge & Iron Co, 9 Murray st, N Y
Channelers.
Ingersoll-Sergeant Drill Co, 26 Cortlandt st, N Y
Sullivan Machinery Co, 135 Adams st, Chicago, Ill
Chemists.
McKenna, Chas. F, 221 Pearl st, N Y
(see also Laboratories.)
Chimneys. (Brick.)
Custodis, A, Chimney Const'n Co, Bennett bldg, N Y
Coal and Ore Handling Machinery.
Aultman Co, Canton, Ohio
Bacon, Earle C, 26 Cortlandt st, New York
Berquist, A S, 515 Bedford ave, Brooklyn, N Y
Brown Hoisting Machinery Co, Cleveland, O
Exeter Machine Works, Pittston, Pa
Hayward Co, 97 Cedar st, New York
Hunt, C W, Co, Richmond Terrace, W N Brighton, NY
Jeffrey Mfg Co, Columbus, Ohio
King Bridge Co, Cleveland, Ohio
Lambert Hoisting Engine Co, Newark, N J
Lidgerwood Mfg Co, 96 Liberty st, N Y
Link Belt Engineering Co, Nicetown, Phila
Main Belting Co, 1219 Carpenter st, Philadelphia
Mead, John A, & Co, 7 Broadway, New York
N. J. Foundry & Machine Co, 9 Murray st, New York
Rawson & Morrison Mfg Co, Cambridgeport, Mass
Robins Conveying Belt Co. 14-21 Park Row, N Y
Simpson H S, Electric bldg, Cleveland
Steubner, G L, 175 Third st, Long Island City, N Y
Colleges (Engineering.) (see page IV.)
Concentrators.
Allis-Chalmers Co. Home Ins bldg, Chicago
Concrete Mixers.
Campbell & Marsh, Cawker bldg, Milwaukee, Wis.
Clyde Iron Works, Duluth, Minn
Cockburn Barrow & Mach. Co, Jersey City, N J
Contractors' Equip Co 447 W. 5th st, Kansas City, M
Contractor's Plant Co, 37 Pittsburg st, Boston
Contractors' Supply & Equip. Co, 232 5th av, Chicago
Drake, C T, 300 W Jackson Boulevard, Chicago
Gilbreth, Frank B, 176 Federal st, Boston
Iroquois Iron Works, Buffalo
Kaltenbach & Griess, 1618 Williamson bldg, Cleveland
McKelvey Concrete Mach'y Co, Security bldg, Chicago
Municipal Eng & Contr'g Co, Manhattan bldg, Chicago
Ransome Concrete Mach'y Co, 11 Broadway, N Y
Concrete Building Apparatus.
Farrell, Thos C, Washington, New Jersey
Concrete Steel Construction
Aberthaw Con. Co, 12 Beacon st, Boston, Mass
Concrete Steel Eng. Co, Park Row Bldg, N Y
Ronsome Concrete Machinery Co, 11 Broadway, N Y
Ransome & Smith Co, 11 Broadway, N Y
St. Louis Exp. Metal Co, St. Louis, Mo.
Truss Metal Lathi Co, 15-25 Whitehall st, N Y
Turner Cons. Co, 11 Broadway, N Y
Condensers.
Alberger Condenser Co, 95 Liberty st, N Y
Allis-Chalmers Co, Home Ins bldg, Chicago
Davidson M T, 58 Keap st, Brooklyn, N Y
Dean Bros, Steam Pump Works, Indianapolis, Ind
Epping-Carpenter Co, Pittsburg
Guild & Garrison, So 10th st, Brooklyn, N Y
Stilwell-Bierce & Smith-Vaile Co, Dayton, O
Worthington, Henry R, Brooklyn, N Y
Conduits (Pipe.)
Blackmer & Post Pipe Co, St. Louis, Mo
Eppinger & Russell Co, 66 Broad st, New York
Field, C J, 29 Broadway, New York
Standard Vitrified Conduit Co, 39 Cortlandt st, N Y
Standard Sewer Pipe Co, Rochester, N Y
Wyckoff Pipe & Creosoting Co., Stamford, Conn
Contractors.
Abbot-Gamble Contracting Co, St. Louis and N Y
American Pipe Mfg Co, 112 N Broad st, Philadelphia
Bates & Rogers Const'n Co, 1206 Manhattan bldg, Chic
Cook Well Co, St. Louis, Mo
Eastern Construction Co, 48 Classon ave, Brooklyn, NY
Eichleay, John, Jr, Co, Pittsburg
Eason, W A, & Co 1137 Stock Exchange bldg, Chicago
Foundation & Contracting Co, 57 Nassau st, New York
Gahagan, W H, 189 Montague st, Brooklyn, N Y
Gest, G M, Cincinnati and New York
Gilbreth, Frank B, 176 Federal st, Boston
Gillespie, T A, Co, Westinghouse bldg, Pittsburg, Pa
Loomis-Pettibone Gas Machy Co, 52-54 William st, N Y
McCabe, Jas. F, 504 Equitable bldg, Baltimore, Md
McMullen, Arthur & Co, 13-21 Park Row bldg, N Y
Murphy, J M & Co, Windsor Arcade, N Y
O'Rourke, John F, Park Row bldg, New York
Phillips & Worthington, 11 Broadway, New York
Puget Sound Bridge & Dredging Co, Seattle, Wash
Quigley, R M, & Co, Laclede bldg, St. Louis, Mo
Regan & Mulock, D F, 4429 Chestnut st, Philadelphia
Smith & Robinson, 8-10 Bridge st, New York
Snare & Triest, 39 Cortlandt st, New York
United Eng & Con Co, 13-21 Park Row, New York
(see also Artesian Wells; Asphalt Paving; Bridges; Dredging; Wharf and Pier Builders.)
Contractors' Tools and Supplies.
Bond, H L, & Co, Pearl & Purchase sts, Boston, Mass
Contractors' Equip Co, 447 W 5th st, Kansas City, M
Crane & Co, Inc, A M, The Rookery, Chicago
Davies, Frank, 66-68 Broad ft, New York
Gilbreth, Frank B, 176 Federal st, Boston
Kennedy & Co, L. E., 17 Broadway, New York
Maxfield, H E, & Co, 136 Liberty st, New York
Shannon, J Jacob, & Co, 1744 Market st, Philadelphia
Standard Supply & Equipment Co, Philadelphia
Wickes Bros New York and Saginaw, Mich
Conveyors. (See Hoisting and Conveying Machinery; also see Trench Machines.)
Cooling Towers.
Alberger Condenser Co, 95 Liberty st, New York
Davidson, M T, 53 Keap st, Brooklyn, N Y
Worthington, Henry R, Brooklyn, N Y
Cranes.
Am. Hoist & Derrick Co, St. Paul, Minn
Brown Hoisting Machinery Co, Cleveland, O
Bucyrus Co, S Milwaukee, Wis
Case Mfg Co, Columbus, Ohio
Chicago Pneumatic Tool Co, Fisher bldg, Chicago
Industrial Works, Bay City, Mich
Kaltenbach & Griess, 1618 Williamson bldg, Cleveland
Lake Bridge Co, Cleveland, Ohio
Manning, Maxwell & Moore, 85 Liberty st, New York
Marion Steam Shovel Co. Marion Ohio
Niles Tool Works Co, 136-138 Liberty st, New York
Pawling & Harnischfeger, 167 Clinton st, Milwaukee
Wood, R D, & Co, Philadelphia, Pa
Cranes (Portable).
North Penn Iron Co, 3d & Sedgley ave, Philadelphia
Creosoting.
American Creosote Works, New Orleans
Atlantic Creo & Wood Pres Works, Norfolk, Va
Carbolineum Wood Preserving Co, 19 Park Row, N Y
Eppinger & Russell Co, 66 Broad st, New York
International Creosoting & Con. Co, Galveston, Tex
New Orleans Wood Pres Works, New Orleans, La
Norfolk Creosoting Co, Norfolk, Va
Southern Cresoting Co, Slidell, La
U S Wood Preserving Co, 29 Broadway, New York
West Pascagoula Creosote W'ks, W Pascagoula, Mss
Wyckoff Pipe & Creosoting Co, Stamford, Conn
Crucibles.
Dixon, Jos., Crucible Co, Jersey City, N J
Damper Regulators.
d'Este, Julian Co, 15 Canal st, Boston
Derrick and Derrick Fittings.
American Hoist & Derrick Co, St. Paul, Minn
Byers, John F, Machine Co, Ravenna, Ohio
Contractors' Plant Mfg Co, 130 Erie st, Buffalo, N Y
Dobbie Foundry & Machine Co, 18 Bay st, N Y
Hayward Co, 97 Cedar st, New York
Kaltenbach & Griess, 1618 Williamson bldg, Cleveland
Lambert Hoisting Engine Co, Newark, N J
Diamond Drills.
American Diamond Rock Drill Co, 95 Liberty st, N Y
Sullivan Machinery Co, 135 Adams st, Chicago
Differential Hoists.
Boston & Lockport Block Co, Boston, Mass
Ditching and Excavating Machinery.
Atlantic, Gulf & Pacific Co, Park Row bldg, N Y
Beatty, M, & Sons, Welland, Ont
Bucyrus Co, S. Milwaukee, Wis
Carson Trench Machine Co, 16 Dorrance st, Boston
Hayward Co, 97 Cedar st, New York
Marion Steam Shovel Co, Marion, Ohio
Osgood Dredge Co, Albany, N Y
Souther, John, & Co, 12 Post Office Square, Boston
Toledo Foundry & Machine Co, Toledo, Ohio
Vulcan Iron Works, Chicago
Vulcan Iron Works Co, Toledo
Western Wheeled Scraper Co, Aurora, Ill
Diver.
Falcon, Jos. G, 1110 Ayres Court, Evanston, Ill
Diving Apparatus.
Morse, Andrew J, & Son, 140 Congress st, Boston
Schrader's, A, Son, 32 Rose st, New York
Docks (Composite and Steel Floating).
Crandall, H I, & Son Co, East Boston, Mass
Doors and Door Fittings.
Kinnear Mfg Co, Columbus, Ohio
N. J. Foundry & Machine Co, 9 Murray st, N Y
Wilson, J Godfrey, 3 W 29th St, N Y
Drafting Tables.
Emerson Mfg. Co., F W, Rochester, N Y
Hein Furniture Co, Toledo, O
Draftsmen's Supplies. (see Instruments.
Drain Tile (see Pipe, Vitrified Clay.)
Dredging and Dredging Machinery.
Atlantic, Gulf & Pacific Co, Park Row bldg, N Y
Beatty, M. & Sons, Welland, Ont
Bucyrus Co, S Milwaukee, Wis
Edwards, Jos., & Co, 414 Water st, New York
Ellicott Machine Co, Baltimore, Md
Falcon, Jos, G, 1110 Ayres Court, Evanston, Ill
Featherstone Fdy & Mach Co, 348 N. Halsted, Chicago
Hayward Co, 97 Cedar st, New York
Lawrence Machine Co, Lawrence, Mass
Marion Steam Shovel Co, Marion, Ohio
Morris Machine Works, Baldwinsville, N Y
Mundy, J S, Newark, N J
Osgood Dredge Co, Albany, N Y
Puget Sound Bridge & Dredging Co, Seattle, Wash
Seattle Bridge Co, Seattle, Wash
Smith & Robinson, 8-10 Bridge st, New York
Smith, Theo., & Bro, Jersey City, N J
Toledo Foundry & Machine Co, Toledo, Ohio
Vulcan Iron Works Co Toledo
Drilling and Boring Machines (Portable).
Contractors' Equip Co, 447 W 5th st, Kansas City, Mo
Knight Mfg Co, Canton, Ohio
Philadelphia Pneumatic Tool Co, Philadelphia
Stow Flexible Shaft Co, 26th & Callowhill sts, Phila
Stow Mfg Co, Binghamton, N Y
(see also Pneumatic Tools.)
Drills (Rock).
American Diamond Rock Drill Co, 95 Liberty st, N Y
Davis Calyx Drill Co, 128 Broadway, New York
Ingersoll-Sergeant Drill Co, Havemeyer bldg, N Y
McKiernan Drill Co, 170 Broadway, New York
Rand Drill Co, 128 Broadway, New York
Rogers, John H, Gloucester City, N J
Sullivan Machinery Co, 135 Adams st, Chicago, Ill
Wood Drill Works, 30 Dale ave, Paterson, N J
Drill Sharpeners
Hendrie & Bolthoff Mfg & Sup. Co, Denver, Colo.
Drop Forgings.
Keystone Drop Forge Wks, 2001-63 Clearfield st, Phila
Drop Hammers.
Merrill Bros, 467 Kent ave, Brooklyn, N Y
Dry Docks (Marine Railway).
Crandall, H I, & Son Co, East Boston, Mass
Dryers (Cement).
American Process Co, 62 William st, New York
Bartlett, C O, & Snow Co, Cleveland, O
Crown Dryer Co, 129 Euclid ave, Cleveland
Cummer, F D, & Son Co, Cleveland, O
Huggles Coles Engineering Co, 41 Cortlandt st, N Y
Stanton, H S, Mfg'r Agt, Electric bldg, Cleveland
Dynamite (see Explosives).
Dynamos.
C & C Electric Co, Central R R bldg, New York
Coho & Co, H B, 114 Liberty st, New York
General Electric Co, Schenectady, N Y
Stow Mfg Co, Binghamton, N Y
Westinghouse Electric & Mfg Co, Pittsburg, Pa
Economizers (Fuel).
Green Fuel Economizer Co, Matteawan, N Y
Broomell, Schmidt & Steacy Co, York, Pa
Electric Storage Batteries.
Electric Storage Battery Co, Philadelphia
Elevators.
Marine Engine & Machine Co, 1123 Broadway, N Y
Morse Elevator Works, Philadelphia
Otis Elevator Co, 2 Broadway, N Y
Employment Bureaus.
Brotherhood Steam Shovel & Dredge Engrs., Chicago
Cleveland Engineering Agency, Box 71, Sta. B, Cleve
Engineering Agency, Monadnock blk, Chicago, Ill
Engineering Employment Bureau, Syracuse N Y
Hapgood Bureau, 257 Broadway, N Y
New York Engineering Agency, 35 Warren st, N Y
Yuzzolino, N, 76 Mulberry st, New York
Engines. (Gas and Gasoline).
American Well Works, Aurora, Ill
Backus Water Motor Co, Newark, N J
Chase Machine Co, Cleveland
Dayton Globe Iron Work Co, 7 Ludlow st, Dayton, O
Fairbanks, Morse & Co, Chicago, Ill
Loomis-Pettibone Gas Machy Co, 52-54 William st, NY
Maxfield, H E, & Co, 136 Liberty st, New York
Mietz & Weiss, 138 Mott st, New York
New Era Iron Work Co, 37 Dale ave, Dayton, O
Otto Gas Engine Works, Philadelphia, Pa
Snow, F W, (Otto Engine) 660 Dearborn st, Chicago
Springfield Gas Engine Co, Springfield, O
Terrell Pump Co, 15th Place, Chicago
U. S. Wind Eng. & Pump Co, 20 Water st, Batavia, I
(see also Engines, Oil.)
Engines (Hoisting).
American Hoist & Derrick Co, St. Paul, Minn
Bacon, Earle C, 26 Cortlandt st, New York
Beatty, M, & Sons, Welland, Ont
Brown Hoisting Machinery Co, Cleveland, O
Byers, John F., Machine Co, Ravenna, Ohio
Chase Machine Co, Cleveland
Contractors' Plant Mfg Co, 130 Erie st, Buffalo, N Y
Dake Engine Co, Grand Haven, Mich
Fairbanks, Morse & Co. Chicago, Ill
Flory, S, Mfg Co Bangor, Pa

ADVERTISERS' CLASSIFIED DIRECTORY.

Hunt, C W., Co, Richmond Terrace, W N Brighton, NY
Lambert Hoisting Engine Co, Newark, N J
Lidgerwood Mfg Co, 96 Liberty st, New York
Monighan's Machine Works, 813 Carroll ave, Chicag
Mundy, J S, Newark, N J
Potter Mfg Co, 2010 N W ave, Indianapolis, Ind
Rawson & Morrison Mfg Co, Cambridgeport, Mas
Sullivan Machinery Co, 135 Adams st, Chicago
Vulcan Iron Works, Wilkesbarre, Pa
(see also Electric Hoists.)

Engines (Marine).
Kingsford Foundry & Machine Works, Oswego N Y
Morris Machine Works, Baldwinsville, N Y
Otto Gas Engine Works, Philadelphia, Pa

Engines (Oil)
Aultman Co, Canton, Ohio
Mietz & Weiss, 128 Mott st, New York

Engines (Portable).
Buffalo Pitts Steam Roller Works, Buffalo, N Y
Port Huron Engine Co, Port Huron, Mich

Engines (Steam).
Allis-Chalmers Co. Home Ins bldg, Chicago
Erie Pump & Engine Co, Erie, Pa
Fairbanks, Morse & Co, Chicago
Featherstone Fdy & Mach Co, 348 N. Halsted, Chicag
Harrisburg Foundry & Mach Co, Harrisburg, Pa
Lawrence Machine Co, Lawrence, Mass
Leffel, Jas, & Co, Springfield, O
Maxfield, H E, & Co, 148 Liberty st, New York
Minneapolis Steel Mach'y Co, Minneapolis, Minn
Morris Machine Works, Baldwinsville, N Y
Southwark Foundry & Machine Works, Philadelphia
Sturtevant, B F, Co, Boston, Mass
Struthers, Wells & Co. Warren, Pa
Sullivan Machinery Co, 135 Adams st, Chicago
Vulcan Iron Works, Wilkesbarre Pa

Engines (Traction).
Aultman Co, Canton, O
Heisler, Chas. L, Erie, Pa
Kelly, O S. Co, Springfield, O
Port Huron Engine Co, Port Huron, Mich

Excavators and Excavating Machinery
(see Ditching and Excavating Machinery and Steam Shovels.)

Exhaust Heads
Burt Mfg. Co, Akron, O

Expanded Metal.
Assoc Exp Metal Cos. Room 1209, 256 Broadway, N Y
General Fireproofing Co, Youngstown O
Truss Metal Lath Co, 15-25 Whitehall st, N Y
Youngstown Iron & Steel Roofing Co, Youngstown, O

Explosives.
Explosives Mfg Co, Elmira, N Y
Electric Exploder Co, 120 Liberty st, N Y
Kirk, Arthur & Son, Co, 910 Duquesne Way, Pittsburg

Faucets.
Campbell, J B, Brass Works, Cascade st, Erie, Pa

Feed Water Heaters.
Allis-Chalmers Co, Home Ins bldg, Chicago
Erie Machine Shops, Erie, Pa
Gem City Boiler Co, Dayton, O
Green Fuel Economizer Co, Matteawan, N Y
Harrison Safety Boiler Wks, 3166 N 17th st, Phila
Patterson, Frank L, & Co, 25 Church st, New York
Robertson, Jas. L, & Sons 192 Fulton st, New York
Stilwell-Bierce & Smith-Vaile Co, Dayton, O

Feed Water Purifiers.
Industrial Water Co, 126 Liberty st, New York
Pittsburg Filter Mfg Co, Pittsburg, Pa
Smith, W B, Perth Amboy, N J

Fencing. (Wire).
American Steel & Wire Co, New York & Chicago
International Fence & Fireproofing Co, Columbus, O
Lamb Wire Fence Co Adrian, Mich

Fillet. (Leather).
Butler, A G, 284 Pearl st, New York

Filing Cases.
Art Metal Construction Co, Jamestown, N Y
General Fireproofing Co, Youngstown, O

Filter Presses.
Stilwell-Bierce & Smith-Vaile Co, Dayton, Ohio

Filters.
Stilwell-Bierce & Smith-Vaile Co, Dayton, O
Deutsch, W M, 141 Broadway, N Y
Jackson Filter Mfg Co, St Louis
Loomis-Manning Filter Co, Philadelphia, Pa
N Y Continental-Jewell Co, 15 Broad st, N Y
Norwood Engineering Co, Florence, Mass
Pittsburg Filter Mfg Co, Pittsburg, Pa
Ross Valve Co, Troy, N Y
Scaife, Wm. B, & Sons Co, Pittsburg

Filters (Oil).
Burt Mfg Co, Akron, O
Robertson, Jas L, & Sons, 92 Fulton st, New York

Fire Department Supplies.
Morse, Andrew J, & Son, 140 Congress st, Boston, Mass

Fire Proofing.
Aberthaw Construction Co, Boston, Mass
Berger Mfg Co, Canton, O
Bromley, A H, Jr, 112 N Broad st, Philadelphia
Beaubique Patents 1123 Broadway, N Y
International Fence & Fireproofing Co, Columbus, O
Metropolitan Fire Proofing Co, Trenton, N J
Ransome Concrete Machinery Co, 11 Broadway, N Y
Ransome & Smith Co, 11 Broadway, N Y
Roebling Construction Co, 121 Liberty st New York
St Louis Expanded Metal Fireproofing Co, St Louis
Truss Metal Lath Co, 15-25 Whitehall st, New York
Wight, W N, & Co, 160 Fifth ave, New York
(see also Expanded Metal, also Concrete Steel Construction.)

Fire Proofing (Hollow Tile).
Maurer, Henry & Sons, 422 E 23d st, New York

Fire Proofing (Wood).
Electric Fireproofing Co, 19th st, and East River, N Y

Fittings (Flanged).
McLeod Co, 95 Liberty st, New York

Flexible Pipe Joint.
Falcon, Jos. G, 1110 Ayres Court, Evanston, Ill
Holmes, A L, Grand Rapids, Mich

Flexible Shafts.
Stow Flexible Shaft Co, 16th & Callowhill sts, Phila
Stow Mfg Co, Binghamton, N Y

Flue Lining (Fire Clay).
Jackson, John H, Albany, N Y
Monmouth Mining & Mfg Co, Monmouth, Ill
New York Pottery Co, 12th ave & 36th sts, N Y
Robinson Clay Product Co, Akron, O

Flush Tanks.
Pacific Flush Tank Co, 48 La Salle st, Chicago Ill

Fly Wheels.
Poole, Robert, & Son Co, Baltimore, Md

Forges (Portable).
Roots, P H & F M, Co, Connersville, Ind
Tate, Jones & Co, Pittsburg Pa

Forgings.
Albree, Chester B, 14-30 Market st, Allegheny, Pa
Baker, Jas H, Mfg Co, 503 Park bldg, Pittsburg, Pa
Brill, J G, Co, Philadelphia, Pa
Cleveland City Forge & Iron Co, Cleveland
Keystone Drop Forge Wks, 2001-45 Clearfield st, Phila
Pennsylvania Steel Co, Steelton, Pa

Friction Clutches.
Brown Hoisting Machinery Co, Cleveland
Dodge Mfg Co, Mishawaka, Indiana
Link Belt Engineering Co, Nicetown, Philadelphia
Smith, S Morgan, Co, York, Pa

Frogs, Switches and Crossings.
Elliot Frog & Switch Co, East St. Louis, Ill
Koppel, Arthur, 66-68 Broad st, N Y
N Y Switch & Crossing Co, Hoboken, N J
Pennsylvania Steel Co, Steelton, Pa
Ramapo Iron Works, Hillburn, N Y
Weir Frog Co, Cincinnati, Ohio

Fuel Economizers (see Economizers).

Furnaces
American Gas Furnace Co, 23 John st, New York
Parson Mfg Co, 320 Broadway, N Y
Petroleum Iron Works, Washington, Pa
Tate, Jones & Co, Empire bldg, Pittsburg

Furniture (Steel),
General Fireproofing Co, Youngstown, O
Hein Furniture Co, Toledo, O

Gages (Steam).
Crosby Steam Gage & Valve Co, Boston

Galvanizing Kettles.
Columbiana Boiler Co, Columbiana, Ohio
Enterprise Boiler Co, Youngstown, Ohio

Galvanized Iron and Steel.
Am Sheet Steel Co Battery Park bldg, New York

Garbage Dump Carts (see Wagons and Carts).

Garbage Furnace.
Morse-Boulger Destructor Co, 39 Cortlandt st, N Y
Smith-Siemens Garbage Furnace, 141 Broadway, N Y

Gas Exhausters.
Connersville Blower Co, Connersville, Ind

Gas Fittings.
Campbell, J B, Brass Works, Cascade st, Erie, Pa

Gas Holders.
Petroleum Iron Works Co, Pittsburg, Pa
Wood, R D, & Co, 400 Chestnut st, Philadelphia
(see also Stand-Pipes and Tanks.)

Gas Machinery.
American Gas Furnace Co, 23 John st, New York
Gas Machinery Co, Cleveland, O
Loomis-Pettibone Gas Machy Co, 52-54 William st, NY
National Drill & Mfg Co, Chicago, Ill
Norwalk Iron Works, South Norwalk, Conn
Parson Mfg Co, 320 Broadway, N Y
Roots, P H, & F M, Co, Connersville, Ind
Wood, R D, & Co, Philadelphia, Pa

Gas Works.
Gas Machinery Co, Cleveland, Ohio

Gaskets.
McCord & Co, 1445 Old Colony bldg, Chicago
U. S. Mineral Wool Co, 143 Liberty st, New York

Gates (Railway).
International Fence & Fireproofing Co, Columbus, O
Pneumatic Signal Co, 1122 Broad-Exchange bldg, N Y

Gearing.
Caldwell H W, & Son Co, Chicago
Dake Engine Co, Grand Haven, Mich
Morse Elevator Works, Philadelphia
Poole, Robert, & Son Co, Baltimore, Md
Smith S. Morgan, Co, York, Pa

Gear-Wheels.
Taylor Iron & Steel Co, High Bridge, N J

Gloves (Hand Made).
Luther, J P, Glove Co, 526 Pearl St, Berlin, Wis

Governors (Water-Wheel).
Lombard Governor Co, 36 Whittier st, Boston
Replogle Governor Works, Chestnut st, Akron, O

Graders.
Austin Mfg Co Manhattan bldg, Chicago
National Drill & Mfg Co, 159 La Salle st, Chicago
Port Huron Engine Co, Port Huron, Mich
Shuart Grader Co, Oberlin, O
Western Wheeled Scraper Co, Aurora, Ill

Grain Elevators (see Tanks, grain storage.)

Granite (see Stone, also Paving Blocks)

Graphite.
Detroit Graphite Mfg Co, Detroit, Mich
Dixon Jos., Crucible Co, Jersey City, N J
Goheen Mfg Co, Canton, Ohio
Internat'l Acheson Graphite Co, Niagara Falls, N Y

Grate Bars.
Dobbie Foundry & Mach Co, 138 Dey st, N Y
Robertson, Jas L, & Sons, 192 Fulton st, New York

Greenhouses.
Plenty, Josephus, Jersey City, N J

Hanger (Joist).
Clark Co, W J, Salem, Ohio
Duplex Hanger Co, Cleveland, Ohio

Headlights (Locomotive).
Brill, J G, Co, Philadelphia
Dressel Ry Lamp Works, 3876 Park ave, New York
Railroad Supply Co, Bedford bldg, Chicago

Heating and Ventilating (Steam & Hot Water
American Blower Co, Detroit
Am. District Steam Heating Co, Lockport, N Y
Keeler, E, Co, Williamsport, Pa
Mass. Fan Co., Waltham, Mass

Hoisting Engines (see Engines, Hoisting).

Hoisting and Conveying Machinery.
American Hoist & Derrick Co, St Paul, Minn
Aultman Co, Canton, O
Beatty, M, & Sons, Welland, Ont
Bartlett, C O, & Snow Co, Cleveland, O
Brown Hoisting Machinery Co, Cleveland, O
Byers, John F, Machine Co, Ravenna, O
Caldwell, H W, & Son Co, 17th st & Western ave, Chic
Cresson Co Geo. V, Philadelphia
Carson Trench Machine Co, Boston, Mass
Contractors' Equip Co, 447 W 5th st, Kansas City, Mo
Denver Engineering Works, Denver, Colo
Dodge Mfg Co, Mishawaka, Indiana
Exeter Machine Works, Pittston, Pa
Garland, M, Co, Bay City, Mich
Hunt, C W, Co, Richmond Terrace, W N Brighton NY
Jeffrey Mfg Co, Columbus, Ohio
Kaltenbach & Griess, 1618 Williamson bldg, Cleveland
King Bridge Co, Cleveland, Ohio
Lidgerwood Mfg Co, 96 Liberty st, New York
Lambert Hoisting Engine Co, Newark, N J
Link Belt Engineering Co, Nicetown, Philadelphia
Main Belting Co, 1219 Carpenter st, Philadelphia
Mead, John A, & Co, 7 Broadway, N Y
Pawling & Harnischfeger, 167 Clinton st, Milwaukee
Robins Conveying Belt Co, 14-21 Park Row, N Y
Trenton Iron Co, Trenton, N J
Union Iron Works, Hoboken, N J
United Telpherage Co, 20-22 Broad st, N Y

Hoists (Electric).
American Hoist & Derrick Co, St Paul, Minn
Denver Engineering Works, Denver, Colo
Hunt, C W, Co, Richmond Terrace, WN Brighton, NY
Lambert Hoisting Engine Co, Newark, N J
Lidgerwood Mfg. Co, 96 Liberty st, N Y
Pawling & Harnischfeger, 167 Clinton st, Milwaukee
Rawson & Morrison Mfg Co, Cambridgeport, Mass
United Telpherage Co, 20-22 Broad st, New York

Hoists (Pneumatic).
Chicago Pneumatic Tool Co, Fisher bldg, Chicago
Christensen, N A, 1212-17 Herman bldg, Milwaukee
Dake Engine Co, Grand Haven, Mich
General Pneumatic Tool Co, Montour Falls, N Y

Hooks (Hoist, Grab, etc.)
Baker, Jas. H, Mfg Co, 503 Park bldg, Pittsburg
Roebling's, John A. Sons Co, Trenton, N J

Hose (Metal).
Moore Chas. C, & Co, 32 First st, San Francisco

Hose (Rubber).
McKiernan Drill Co, 170 Liberty st, N Y

Hose (Suction).
Edson Mfg Co, 255 Atlantic ave, Boston

Hydrants and Valves.
Bourbon Copper & Brass Works, Cincinnati, O
Cayuta Wheel & Foundry Co. Sayre, Pa
Chapman Valve Mfg Co, Indian Orchard, Mass
Clow, J B & Sons, Lake & Franklin sts. Chicago
Coffin Valve Co, Boston, Mass
Coldwell-Wilcox Co, Newburg, N Y
Darling Pump & Mfg Co, Box E, Williamsport, Pa
Dimmick, J K, & Co, 1049-51 Drexel bldg, Phila
Drummond, M J, & Co, 192 Broadway, N Y
Fox, John & Co, 253 Broadway, N Y
Kennedy Valve Mfg Co, 50 Beekman st, N Y
Loetzer Valve & Mfg Co, Towanda, Pa
Ludlow Valve Mfg Co, Troy, N Y
McLean, John, 298 Monroe st, New York
Millar, Chas. & Son, Co, Utica, N Y
Norwood Engineering Co, Florence, Mass
Reading Foundry Co, Ltd, Reading, Pa
Ross Valve Co, Troy, N Y
Smith, A P, Mfg Co, Newark, N J
Thompson, J, & Co, Philadelphia, Pa
Wood, R D, & Co, Philadelphia, Pa

Hydraulic Jacks.
Watson-Stillman Co 210 E. 43d st, New York

Hydraulic Leather Packing.
Darling Pump & Mfg Co, Box E, Williamsport, Pa
Detroit Leather Specialty Co, 900 Michigan av, Detroit

Hydraulic Machinery.
Dayton Globe Iron Work Co, 7 Ludlow st, Dayton, O
Deming Co, Salem, Ohio
Pelton Water Wheel Co 134 Main st, San Francisco
Power Specialty Co, 126 Liberty st, New York
Watson-Stillman Co, 210 E 43d st, New York
Wood, R D, & Co. Philadelphia, Pa

Hydraulic Presses.
Power Specialty Co, 126 Liberty st, New York
Watson-Stillman Co, 204 E 43d st, New York
Wood, R D & Co, 400 Chestnut st, Philadelphia

Hydraulic Rams.
Pelton Water Wheel Co, 134 Main st, San Francisco
Power Specialty Co, 126 Liberty st, New York

Ice and Refrigerating Machinery.
Featherstone Fdy & Mach Co, 348 N Halsted, Chicago

Indicators (Steam Engine).
Ashcroft Mfg Co, 85 Liberty st, New York
Crosby Steam Gage & Valve Co, Boston, Mass

Injectors.
Hayden & Derby Mfg Co, 85 Liberty st, New York
Lunkenheimer Co. Cincinnati, Ohio
Parson Mfg Co, 320 Broadway, N Y

Instruments (Engineering, Drafting).
Ainsworth, Wm. & Sons, Denver Colorado
Aloe, A S, Co, 414 N Broadway, St. Louis, Mo
Alteneder, Theo, & Sons, 945 Ridge ave, Phila, Pa
Archts' & Engrs' Supply Co, 1011 Walnut st, Kan. City
Beckman, L, 57 Adams st Toledo, Ohio
Berger, C L, & Sons, 37 Williams st, Boston, Mass
Brandis, F E, Sons & Co, 814 Gates ave, Brooklyn, N Y
Brown & Sharpe Mfg Co, Providence, R I
Buff & Buff Co, J P Station, Boston, Mass
Dietzgen, Eugene, Co, 181 Monroe st, Chicago
Engineers' Instrument Exchange, Scranton, Pa
Gurley, W & L E, Troy, N Y
Hardtmuth, L & C, 49 Barclay st, New York
Heller & Brightly Spring Garden st & Ridge av, Phila
Hetterschied Mfg Wks, Grand Rapids, Mich
Keuffel & Esser Co, 127 Fulton st New York
Knight, F C, & Co, 400 Locust ave, Philadelphia Pa
Koelsch & Co, 138 Fulton st, New York
Ledder, G G, 352 School st, Boston
Lietz, A, Co, 422 Sacramento st, San Francisco, Ca
Mahn & Co, 308-312 Olive st, St. Louis
Mogey, W & D, Bayonne, N J
Pfister, Herm, 428 Plum st, Cincinnati, O
Prince, L M, 108 West 4th st, Cincinnati, O
Queen & Co, Inc, Philadelphia, Pa
Saegmuller, G N, Washington, D C
Sala, J C, 429 Montgomery st, San Francisco
Schwencke, Kirk & Co, 26 Church st, New York
Soltmann, E G, 123 E 23d st, New York
Stackpole & Bro, 39 Fulton st, New York
Stanley, W F, & Co, Great Turnstile, Holborn, London
Ulmer, J C, & Co, 224 Champlain st, Cleveland, Ohio
Universal Drafting Mach Co, Blackstone bldg, Cleve
Weber, F, & Co, Philadelphia
Williams, Brown & Earle, 918 Chestnut st, Phila
Wittstock, P & R, Berlin, S. 59, Germany
Young & Sons, 43 N. 4th st, Philadelphia

Insulating Materials.
Standard Paint Co. 103 William st, New York

Iron Work (Ornamental).
Albree, Chester B, 14-30 Market st, Allegheny, Pa
Belmont Iron Works, Philadelphia Pa
Brooks, T H, & Co, Cleveland, O
Rogers Iron Co, Springfield, O
Schrieber, L, & Sons Co, Cincinnati, O
Snead & Co Iron Works, ft of Pine st, Jersey City, N J
Walton Iron Co, Cincinnati, O

Iron Work (Structural).
(see Structural Steel and Iron Work.)

Jacks
Duff Mfg Co, Allegheny, Pa
Norton, A O, 286 Congress st, Boston
Watson-Stillman Co, 210 E 43d st, N Y

Labor (Italian).
Italo-American Trust Co, 725 Carpenter st, Phila
Julian Bros, 110 Mott st, New York
Vuzzolino, N, 73 Mulberry st, New York
(See Employm ent Bureaus).

Laboratories (Chemical and Testing).
Booth, Garrett & Blair, Philadelphia, Pa
Hunt, R W, & Co, Rookery, Chicago
McKenna, Chas F, 221 Pearl st, New York
Pittsburg Testing Laboratory, Pittsburg, Pa
Riehle Bros. Test & Machine Co, Philadelphia, Pa

Lamps (Electric).
General Electric Co, Schenectady, N Y
Westinghouse Electric & Mfg Co, Pittsburg

Lathing (Metallic).
Berger Mfg Co, Canton O
General Fireproofing Co, Youngstown, O
Truss Metal Lath Co, 15-25 Whitehall st, N Y
(see also Fireproofing.)

Lead (Pig).
Millar, Chas & Son Co, Utica, N Y
Ogden, J Edward Co, 147 Cedar st, New York

Lead Furnaces.
McLean, John, 298 Monroe st, New York
Ogden, J Edward Co, 147 Cedar st, New York
Union Iron Works, Hoboken, N J

Light (Contractors').
Kitson Hydro-Carbon Htg & Lighting Co, Phila
Macleod & Co, Walter, Cincinnati Ohio
Wells Light Co, 44 Washington st, New York

Locomotive Tires.
Latrobe Steel Co, 1200 Girard bldg, Philadelphia, Pa

Locomotives.
American Locomotive Co, 25 Broad st, New York
Baldwin Locomotive Works, Philadelphia, Pa
Heisler, Charles L, Erie, Pa.
Porter, H K Co Pittsburg, Pa.

Locomotives (Contractors').
Avery, C F, 114 Liberty st, New York
Byers, John F, Machine Co, Ravenna, Ohio
Fitz-Hugh & Co, Chicago and New York
Porter, H K, Co, Pittsburg, Pa
Vulcan Iron Works, Wilkesbarre, Pa

Locomotives (Electric and Mining).
Baldwin Locomotive Works, Philadelphia, Pa
Brill, J G, Co, Philadelphia
General Electric Co, Schenectady, N Y
Jeffrey Mfg Co, Columbus, O
Koppel, Arthur, 66 Broad st. New York
Patton & Co, R., House bldg, Pittsburg, Pa
Porter, H K, Co, Pittsburg, Pa
Westinghouse Electric & Mfg Co, Pittsburg

Locomotive Headlights.
(see Headlights, Locomotives.)

Locomotives (Second hand).
(See Railway Equipment, Dealers.)

Lubricants.
Dixon, Jos, Crucible Co, Jersey City, N J

Lubricators.
Crane Co, Chicago, Ill
Lunkenheimer Co, Cincinnati, Ohio

Lumber (Creosoted).
American Creosote Works, Ltd, New Orleans, La
Atlantic Creo & Wood Pres Wks, 10 Bridge St, N Y
Carbolineum Wood Pres Co, 18 Park Row, N Y
International Creosoting & Con Co, Galveston, Tex
Norfolk Creosoting Co, Norfolk, Va
Wyckoff Pipe & Creosoting Co, Stamford, Conn
(see also Creosoting)

Lumber (Dock).
Vanderbilt & Hopkins, 126 Liberty st, New York

Machinery (Second hand).
Braden, Jas A, 514 Park Row bldg, New York
Briggs, Marvin, 12 Broadway, New York
Carlin Machy & Supply Co, 186 Lacock st, Allegheny
Carlin, W J, 34th st & A V R R, Pittsburg, Pa
Chicago House Wreck Co, W. 35th & Iron sts, Chicago
Contractors' Supply Co. 1531 Monadnock blk Chicago
Contractors' Plant Depot, 27 William st New York
Contractors' Supply Co, Park bldg, Pittsburg, Pa
Driscoll, J. T., McCormick bldg Chicago
Fitz-Hugh Co, Monadnock block, Chicago
Grant & Harper Machy Co, Park Row bldg, New York
Kaiser, A V, & Co, 222 So 3d st, Phila, Pa
Low, Edgar S. Co, Empire bldg, Pittsburg
Saxton, J C, 18 Broadway, New York
Troy Public Works Co, 1 Mann bldg, Utica, N Y
Whitney, O R, 39 Cortlandt st, New York
Wormer Machy Co, 106 Woodbridge st, Detroit, Mich

Machine Tools.
Manning, Maxwell & Moore, 85 Liberty st, New York
Niles Tool Works Co, 136-138 Liberty st, New York

Mail Chutes.
Cutler Mfg Co, Rochester, N Y

Manholes and Covers.
(See Sewer and Street Castings; also Castings, Iron.)

Measure (Rotary).
Steckenreiter Mfg Co, 98 Lake st, Chicago, Ill

Measuring Tapes. (Steel).
Chicago Steel Tape Co, 508 Temple Court, Chicago
Johnston, Robt, Wilkesbarre, Pa
Keuffel & Esser, 127 Fulton st, New York
Lufkin Rule Co, Saginaw, Mich
Starrett, L S, Co, 86 Crescent st, Athol, Mass

Merchandise Checks.
Am. Ry Supply Co, 24 Park Place, New York

Mechanical Draft.
American Blower Co, Detroit
Sturtevant, B F, Co, Boston, Mass
(see also Blowers.)

Metal Hose (See Hose, Metal).

Meters (Current).
Berger, C L & Sons, 9 Province st, Boston, Mass

Meters (Electric).
General Electric Co, Schenectady, N Y
Westinghouse Electric & Mfg Co, Pittsburg

Meters (Gas).
Pittsburg Meter Co East Pittsburg, Pa

Meters (Water).
Buffalo Meter Co, 353 Washington st, Buffalo
Builders Iron Foundry, Providence, R I
Cole, E S, 135 Park Row bldg, New York
Hersey Mfg Co, Boston, Mass
Neptune Meter Co, 253 Broadway, New York
Pittsburg Meter Co, East Pittsburg, Pa
Thomson Meter Co, 79 Washington st, Brooklyn, N Y
Union Water Meter Co, Worcester, Mass
Worthington, Henry R, Brooklyn, N Y

Mining Machinery and Equipment.
Allis-Chalmers Co, Home Ins bldg, Chicago
American Diamond Rock Drill Co, 95 Liberty st N Y
Blanton E A, Jr, The Bourse, Philadelphia
Bradley Pulverizer Co, 92 State st, Boston, Mass
Bucyrus Co, S. Milwaukee, Wis
Fairbanks, Morse & Co, Chicago
General Electric Co, Schenectady, N Y
Jeffrey Mfg. Co, Columbus, O
Lidgerwood Mfg Co, 96 Liberty st, N Y
Marion Steam Shovel Co, Marion, Ohio
Philips Mine and Mill Supply Co, Pittsburg, Pa
Rand Drill Co, 128 Broadway, N Y
Sullivan Machinery Co, 135 Adams st, Chicago, Ill
Vulcan Iron Works, Wilkesbarre, Pa

Mortar Mixers.
Drake, C T, 300 W Jackson Boulevard, Chicago

Motors (Electric). (see Dynamos.)
Loomis Pettibone Gas Machy Co, 52-54 William st NY

Non-Conducting Covering.
U S Mineral Wool Co, 143 Liberty st, New York

Nut Locks.
National Elastic Nut Co, Milwaukee, Wis

Oil Burners.
Hammel, C A, 120 Fifth st, Los Angeles, Cal

Oil Cups.
Crane Co, Chicago, Ill
Lunkenheimer Co, Cincinnati, Ohio

Oil Mill Machinery.
Stilwell-Bierce & Smith-Vaile Co, Dayton, Ohio

Oilless Bearings.
No Am Metaline Co, 6 West av, Long Island City, N Y

Ore Handling Machinery.
(see Coal and Ore Handling Machinery.)

Packing.
Detroit Leather Specialty Co, 900 Michigan av, Detro

Painting Machines (Pneumatic).
Hook, F E, Hudson, Mich
Macleod & Co, Walter, Cincinnati, O

Paint Pigment.
Internat'l Acheson Graphite Co, Niagara Falls N Y

Paints.
Carbolineum Wood Pres Co, 13 Park Row, N Y
Chilton Paint Co, 69 Cortlandt st, N Y
Detroit Graphite Mfg Co, Detroit, Mich
Dixon, Jos, Crucible Co, Jersey City, N Y
Goheen Mfg Co, Canton, Ohio
Heath & Milligan Mfg Co, Chicago
Hook, F E, Hudson, Mich
Rinald Bros, 1142 N Hancock st, Philadelphia
Sicilian Asphalt Paving Co, Times bldg, New York
Standard Paint Co, 103 William st, New York
Toch Bros, New York
Zibell Damp-Resisting Paint Co, 290 Front st, N Y

Paint (Cold Water).
Bird & Co, J A & W, 10 Well st, Boston

Patent Attorneys.
Hill, Thos A, 261 Broadway, New York
Straley, Hasbrouck & Schloeder, 257 Broadway, N Y

Pattern Letters.
Butler, A G, 284 Pearl st, New York

Paving (Bituminous-Macadam).
Warren Bros Co, 93 Federal st, Boston

Paving Blocks (Stone).
Leopold, J, & Co, 18 Broadway, New York
(See also Stone.)

Paving Brick (see Brick).

Perforated Metals.
Harrington & King Perforating Co, Chicago, Ill

Pile Driving Machinery.
American Hoist & Derrick Co, St. Paul, Minn
Beatty, M, & Sons, Welland, Ont
Bucyrus Co, South Milwaukee Wis
Contractors' Plant Mfg Co, Buffalo, N Y
Lidgerwood Mfg Co, 96 Liberty st, N Y
Mundy, J S, Newark, N J
Toledo Foundry & Machine Co, Toledo, Ohio
Vulcan Iron Works, Chicago, Ill

Pile Hammers.
Vulcan Iron Works, Chicago, Ill

Piling.
American Creosote Works, Ltd, New Orleans, La
Atlantic Creosot. & Wood Pres. Co, 10 Bridge st, N Y
Eppinger & Russell Co, 66 Broad st, New York
Interlocking Channel Bar Co, Tribune bldg, Chicago
Meredith J P, Memphis, Tenn
New Orleans Wood Preserving Works, New Orleans
Norfolk Creosoting Co, Norfolk, Va
Southern Creosoting Co, Slidell, La
Wyckoff Pipe & Creosoting Co, Stamford, Conn

Pipe (Cast Iron).
Builders Iron Foundry, Providence, R I
Byers, John F, Machine Co, Ravenna, Ohio
Clow, J B, & Sons, Lake and Franklin sts, Chicago
Dimmick Pipe Co, Birmingham, Ala
Dimmick, J K, & Co, 1049-51 Drexel bldg, Phila
Donaldson Iron Co, Emaus, Pa
Drummond, M J, & Co, 192 Broadway, New York
Fox, John, & Co, 253 Broadway, New York
Massillon Iron & Steel Co, The Rookery, Chicago
Millar, Chas, & Son Co, Utica, N Y
Reading Foundry Co, Ltd, Reading, Pa
Snow, T W, 350 Dearborn st, Chicago, Ill
U S Cast Iron Pipe & Fdry Co, 217 La Salle st, Chicago
U S Wind Engine & Pump Co, Batavia, Ill
Warren Foundry & Machine Co, 160 Broadway, N Y
Wood, R D, & Co, Philadelphia, Pa

Pipe (Culvert). See Pipe, Vitrified Clay.

Pipe (Lead).
Millar, Chas. & Son Co, Utica, N Y

Pipe (Riveted Steel).
Carroll-Porter Boiler & Tank Co, Pittsburg, Pa
Columbiana Boiler Co, Columbiana, Ohio
Gillespie, T A, Co, Pittsburg, Pa
Keeler, E, Co, Williamsport, Pa
McNeil, Jas, & Bro, 29th & Railroad sts, Pittsburg Pa
Means & Fulton Iron Works, Birmingham, Ala
Pelton Water Wheel Co, 134 Main st, San Francisco
Petroleum Iron Works Co, Pittsburg, Pa
Scaife, Wm B, & Sons Co, Pittsburg, Pa
Tallerday Steel Pipe & Tank Co, Waterloo, Ia
Warren City Tank & Boiler Works, Warren, O
Weigele Riveted Steel Pipe Works, Denver, Colo

Pipe (Spiral Riveted).
Abendroth & Root Mfg Co, Newburgh, N Y
Am Spiral Pipe Works, 64-66 Wabash ave, Chicago
Pipe (Vitrified Clay).
American Sewer Pipe Co. Pittsburg, Pa
Blackmer & Post Pipe Co, St Louis, Mo
Dickey, W S, Clay Mfg Co, Kansas City, Mo
Evens & Howard Fire Brick Co, St Louis, Mo
Illinois Mfg Co, Macomb, Ill
Jackson, John H, Albany, N Y
Millar, Chas, & Son Co, Utica, N Y
Monmouth Mining & Mfg Co, Monmouth, Ill
New York Pottery Co, 12th ave & 36th st, N Y
Robinson Clay Product Co, Akron, O
Standard Sewer Pipe Co, Rochester, N Y

ADVERTISERS' CLASSIFIED DIRECTORY.

Pipe (Wooden).
American District Steam Co. Lockport, N Y
Excelsior Wooden Stave Pipe Co, San Francisco
National Wood Pipe Co, Los Angeles, Cal
Wyckoff Pipe & Creosoting Co, Stamford, Conn

Pipe (Wrought Iron).
Crane Co, Chicago, Ill
Fox, John & Co, 253 Broadway, New York
National Tube Co, Pittsburg
Pittsburg Pipe & Iron Co, Allegheny, Pa
California Redwood Pipe Co. Los Angeles

Pipe Casing.
U S Mineral Wool Co, 143 Liberty st, New York

Pipe Cutting and Threading Machines.
Saunder's, D, Sons, Yonkers, N Y

Pipe Fittings and Flanges.
Crane Co, Chicago, Ill
Darling Pump & Mfg Co, Box E, Williamsport, Pa
Latrobe Steel Co, Girard bldg, Philadelphia
National Tube Co, Pittsburg
Thompson, J, & Co, Van Horn & Sophia sts, Phila Pa
Tight Joint Co, 306-310 East 47th st, New York
Walworth Mfg Co, Boston

Pipe Joint (High Pressure).
Tight Joint Co, 306-310 East 47th st, New York
Walworth Mfg Co, Boston

Pipe Jointers.
Watkins, Thos, Johnstown, Pa

Pipe Laying (Submarine).
Falcon, Joe G, 1110 Ayers Court, Evanston, Ill
Holmes, A L, Grand Rapids, Mich

Pipe Line Supplies.
Orden, J Edward Co, 147 Cedar st, New York

Pipe Tapping Machines (See Tapping Machines)

Plaster.
Rock Plaster Co, 11 Broadway, N Y

Plows (see Scrapers and Plows).

Plumbers' Supplies.
Campbell, J G, Brass Works, Cascade st, Erie, Pa
Clow, J B, & Sons, Lake and Franklin sts, Chicago
Miliar, Chas, & Son, Utica, N Y

Pneumatic Tools.
Chicago Pneumatic Tool Co, Fisher bldg, Chicago
Columbus Pneumatic Tool Co, Columbus, Ohio
General Pneumatic Tool Co., Montour Falls, N Y
Helwig Mfg Co, St Paul, Minn
Philadelphia Pneumatic Tool Co, Philadelphia
Slocomb, F F, & Co, Wilmington, Del
(see also Riveting Machines)

Poles (Wooden)
(see Piling.)

Portable Light (see Light, Contractors').

Portable Tracks.
Hunt, C W, Co, Richmond Terrace, W N Brighton, NY
Koppel, Arthur, 68 Broad st, New York
Wonham-Magor Eng. Wks, 29 Broadway, New York

Power Hammers.
Merrill Bros, 467 Kent ave, Brooklyn, N Y

Power Transmission (Electric).
General Electric Co, Schenectady, N Y
Leffel, Jas, & Co, Springfield, O
Pelton Water Wheel Co, 134 Main st, San Francisco
Westinghouse Electric & Mfg Co, Pittsburg

Power Transmission (Rope).
Caldwell, H W, & Son Co, 17th st & Western ave, Chicago
Case Mfg Co, Columbus, O
Cresson, Geo V, Co, Philadelphia
Dodge Mfg Co, Mishawaka, Indiana
Hunt, C W, Co, Richmond Terrace, W N Brighton, NY
Jeffrey Mfg Co, Columbus, O
Link Belt Engineering Co, Nicetown, Phila

Pressure Gages (Recording)
Bristol Co, Waterbury, Conn

Pressure Regulators
d'Estè, Julian, Co, 15 Canal st, Boston
Foster Engineering Co, Newark, N J
Union Water Meter Co, Worcester, Mass

Pulleys.
Case Mfg Co, Columbus, O
Dodge Mfg Co, Mishawaka, Indiana

Pulverizers (Ore and Cement).
Allis-Chalmers Co, Home Ins bldg, Chicago
Bradley Pulverizer Co, 92 State st, Boston, Mass
Clark J C, Box 525, Atlanta, Ga
Cresson, Geo V, Co, Philadelphia
Kent Mill Co, 120 Broadway, New York
Newell Mfg Co, 149 Broadway, New York
Smidth, F L & Co, 66 Maiden lane, New York

Pumps and Pumping Machinery.
Allis-Chalmer Co, Home Ins bldg, Chicago
American Well Works, Aurora, Ill
Barr Pumping Engine Co, Philadelphia
Blake, Geo F, Mfg Co, 91 Liberty st, New York
Bonnot Co, Canton, Ohio
Cameron, A S, Steam Pump Works, New York
Clow, J B, & Sons, Lake and Franklin sts, Chicago
Cook Well Co, St Louis
d'Auria Pumping Engine Co, 941 Drexel bldg, Phila
Davidson, M T, 52 Keap st, Brooklyn, N Y
Dean Bros' Steam Pump Works, Indianapolis, Ind
Deane Steam Pump Co, Holyoke, Mass
Deming Co, Salem, Ohio
Downie Pump Co, Downieville, Pa
Edwards, Jos, & Co, 414 Water st, New York
Epping Carpenter Co, Pittsburg
Fairbanks, Morse & Co, Chicago
Flint & Walling Mfg Co, Kendalville, Ind
Goulds Mfg Co, Seneca Falls N Y
Guild & Garrison, So 10th st, Brooklyn, N Y
Hill Machine Co, Anderson, Ind
Heisler Pumping Engine Co, Erie, Pa
Knowles Steam Pump Works, 81 Liberty st, N Y
Laidlaw-Dunn-Gordon Co, Cincinnati, O
Lawrence Machine Co, Lawrence, Mass
McGowan, John H, Co, Cincinnati, Ohio
Norwalk Iron Works Co, South Norwalk, Conn
Pulsometer Steam Pump Co, 135 Greenwich st, N Y
Quimby, Wm E, 141 Broadway, N Y
Roots, P H & F M, Co, Connersville, Ind
Scranton Steam Pump Co, 151 Franklin ave, Scranton
Snow Steam Pump Works, 120 Liberty st, New York
Southwark Foundry & Machine Works, Philadelphia
Stilwell-Bierce & Smith-Vaile Co, Dayton, Ohio
U S Wind Engine & Pump Co, Batavia, Ill
Wood, P K, 209 No Main st, Los Angeles, Cal
Wood, R D, & Co, Philadelphia
Worthington, Henry R, Brooklyn, N Y

Pumps (Air Lift).
Bacon Air Lift Co, 120 Broadway, New York
Ingersoll-Sergeant Drill Co, Havemeyer bldg, N Y
Pneumatic Engineering Co, 128 Broadway, N Y
Union Steam Pump Co, Battle Creek, Mich

Pumps (Artesian Well).
Davidson, M T, 141 Broadway, New York
Downie Pump Co, Downieville, Pa
Wood, P K, 209 No Main st, Los Angeles, Cal
U S Wind Engine & Pump Co, Batavia, Ill

Pumps (Centrifugal).
Baldwinsville (N Y) Centrifugal Pump Works
Bucyrus Co, South Milwaukee, Wis
Edwards, Jos, & Co, 414 Water st, New York
Erie Pump & Engine Co, Erie, Pa
Kingsford Foundry & Machine Works, Oswego, N Y
Lawrence Machine Co, Lawrence, Mass
Maxfield, H E, & Co, 136 Liberty st, New York
Morris Machine Works, Baldwinsville, N Y
Temple Pump Co, 15th Place, Chicago
Wood, R D, & Co, Philadelphia

Pumps (Diaphragm).
Boston & Lockport Block Co, 180 Commercial st, Boston
Edson Mfg Co, 285 Atlantic ave, Boston

Pumps (Electric).
Davidson, M T, 141 Broadway, New York
Deming Co, Salem, Ohio
Goulds Mfg Co, Seneca Falls, N Y
Quimby, Wm. E, 141 Broadway, New York
Stilwell-Bierce & Smith-Vaile Co, Dayton, O
Worthington, Henry R, Brooklyn, N Y

Pumps (House Service).
Quimby, Wm E, 141 Broadway, New York

Pumps (Mining)
Davidson, M T, 141 Broadway, New York
Goulds Mfg Co, Seneca Falls, N Y
Pneumatic Engineering Co, 128 Broadway, N Y
Pulsometer Steam Pump Co, 135 Greenwich st, N Y
Scranton Steam Pump Co, Scranton, Pa
Snow Steam Pump Works, 120 Liberty st, New York
Stilwell-Bierce & Smith-Vaile Co, Dayton, O
Wood, P K, 209 No Main st, Los Angeles, Cal

Punching Tools.
Pels & Co, Henry, 66-68 Broad st, New York

Pumps (Rotary).
Connersville Blower Co, Connersville, Ind

Pyrometers.
Bristol Co, Waterbury, Conn

Quarrying Machinery.
American Hoist & Derrick Co, St Paul, Minn
Flory, S, Mfg Co, Bangor, Pa
Ingersoll-Sergeant Drill Co, 26 Cortlandt st, New York
Rand Drill Co, 128 Broadway, New York
Sullivan Machinery Co, 136 Adams st, Chicago
Tyrone Foundry & Machine Co, Tyrone, Pa

Rack Railways.
Hildenbrand, Wm, 1 Broadway, New York

Rail Fastenings.
Continuous Rail Joint Co of America, Newark, N J
National Elastic Nut Co, Milwaukee
N Y Rail Insulation & Equip Co, 200 Market st, Newark
Weber Ry Joint Mfg Co, Cotton Exch bldg, N Y

Rail Joints.
Bonzano Rail Joint Co, 22 South 15th st, Philadelphia
Continuous Rail Joint Co of America, Newark, N J
McConway & Torley Co, Pittsburg, Pa
Weber Ry Joint Mfg Co Cotton Exch bldg, N Y

Rails (Relaying).
Continental Equipment Co, 5-17 Battery Place, N Y
Donaldson & Newton, 123 Chestnut st, Philadelphia
Grant & Harper Machy Co, Park Row bldg, New York
Hyde Bros, 902 Lewis bldg, Pittsburg
Johnson, Chas F, 908 Ellicott square, Buffalo
Robinson & Orr, 419 Wood st, Pittsburg
Tallon C J, 308 Market st, San Francisco

Rails (Steel).
Baumgarten & Bro, A F, Pittsburg, Pa
Buffalo Steel Co, Tonawanda, N Y
General Supply & Const'n Co, 8-10 Bridge st, N Y
Koppel, Arthur, 68 Broad st, New York
Pennsylvania Steel Co, Steelton, Pa

Railway Equipment (Dealers).
Apex Equipment Co, 11 Broadway, New York
Davenport Machine Works, Davenport, Ill
Fitz-Hugh & Co, Monadnock bldg, Chicago
Low, Edgar S, Co, Empire bldg, Pittsburg
Wales Co, Ætna bldg, Cincinnati
Shannon, J Jacob, & Co, 1744 Market st, Philadelphia
Watson, Benjamin, 66 Beaver st, New York
Wood & Co, 545 Marquette bldg, Chicago, Ill

Railway Signals (Pneumatic)
Pneumatic Signal Co, Broad-Exchange bldg, N Y

Railway Ties.
American Creosote Works, Ltd, New Orleans La
New Orleans Wood Preserving Works, New Orleans
Vanderbilt & Hopkins, 128 Liberty st, New York
Wyckoff Pipe & Creosoting Co, Portsmouth, Va

Railway Track Specialties.
Diamond State Steel Co, Wilmington, De
N Y Switch & Crossing Co, Hoboken, N J
Railroad Supply Co, Bedford bldg, Chicago
Ramapo Iron Works, Hillburn, N Y
Weir Frog Co, Cincinnati, Ohio

Railways (Industrial).
Koppel, Arthur, 68 Broad st, New York
Wonham-Magor Eng. Wks, 29 Broadway, New York

Riveting Machines.
Aibree, Chester B, 14-30 Market st, Allegheny, Pa
Allen, John F, 370 Gerard ave, New York
General Pneumatic Tool Co, Montour Falls, N Y
Manning, Maxwell & Moore, 85 Liberty st, New York
Rand Drill Co, 128 Broadway, New York
Wood, R D, & Co, 400 Chestnut st, Philadelphia Pa
(see also Pneumatic Tools.)

Road Rollers and Machinery.
Acme Road Machinery Co, Frankfort, N Y
Austin Mfg Co, F C, Harvey, Ill
Buffalo Pitts Steam Roller Works, Buffalo, N Y
Climax Road Machine Co, Marathon, N Y
Erie Machine Shops, Erie, Pa
Goods Roads Machinery Co, Kennett Square, Pa
Harrisburg Foundry & Mach Co, Harrisburg, Pa
Heisler, Chas L, Erie, Pa
Huber Mfg Co, Marion, Ohio
Iroquois Iron Works, 178 Walden ave, Buffalo, N Y
Kelly-Springfield Road Roller Co, Springfield, O
Oastler, W C, 156 Fifth ave, New York
Port Huron Engine Co, Port Huron, Mich
Scholl, Julian, & Co, 126 Liberty st, New York
Shuart Grader Co, Oberlin, O
Western Wheeled Scraper Co, Aurora, Ill

Rock and Ore Crushers.
Acme Road Machinery Co, Frankfort, N Y
Allis-Chalmers Co Home Ins bldg, Chicago
Austin Mfg Co, F C, Harvey, Ill
Aultman Co, Canton, Ohio
Bradley Pulverizer Co, 92 State st, Boston, Mass
Climax Road Machine Co, Marathon, N Y
Cresson Co, Geo V, Philadelphia
Farrel Foundry & Machine Co, 26 Cortlandt st, N Y
Good Roads Machinery Co, Kennett Square, Pa
Scholl, Julian, & Co, 126 Liberty st, New York
Smidth, F L & Co, 66 Maiden lane, New York
Sturtevant Mill Co, 108 Clayton st, Boston
Tyrone Foundry & Machine Co, Tyrone, Pa
Western Wheeled Scraper Co, Aurora, Ill

Rock Drills (see Drills, Rock)

Rolling Doors, Partitions, etc. (Steel).
Kinnear Mfg Co, Columbus, Ohio
Wilson, J G, 3 W 29th St, New York

Roofing.
Standard Paint Co, 103 William st, New York

Roofing (Corrugated).
Garry Iron & Steel Co, Coe and Lake sts, Cleveland
Scaife, W B, & Sons Co, Pittsburg

Rope (Manila).
Dodge Mfg Co, Mishawaka, Indiana
Hunt, C W, Co, Richmond Terrace, W N Brighton, NY
Smith, S Morgan, Co, York, Pa

Scales (Weighing).
Fairbanks, Morse & Co, Chicago
Richardson Scale Co, 1 Park Row, New York

Schools (Correspondence).
Am. School at Armour Inst of Tech, Chicago
(For Directory of Engineering Schools see p. 4.)

Scrapers and Plows.
Austin Mfg Co, Manhattan bldg, Chicago
Contractors' Plant Mfg Co, Buffalo, N Y
Climax Road Machine Co, Marathon, N Y
Good Roads Machinery Co, Kennett Square, Pa
National Drill & Mfg Co, 159 La Salle st, Chicago
Shuart Scraper Co, Oberlin, O
Smith & Sons Mfg Co, Kansas City, Mo
Syracuse Chilled Plow Co, Syracuse, N Y
Western Wheeled Scraper Co, Aurora, Ill

Screens (Stone and Sand).
Allis-Chalmers Co, Home Ins bldg, Chicago
Aultman Co, Canton, O
Climax Road Machine Co, Marathon, N Y
Harrington & King Perforating Co, Chicago, Ill
Taylor Iron & Steel Co, High Bridge, N J

Screens (Water-Works).
Coffin Valve Co, Boston, Mass
Coldwell-Wilcox Co, Newburg, N Y

Seamless Drawn Tanks and Tubes.
National Tube Co, Pittsburg

Separators (Oil and Steam).
Harrison Safety Boiler Wks, 2166 N 17th st, Phila
Robertson, Jas L, & Sons, 192 Fulton st, New York

Sewage Disposal.
Cameron Septic Tank Co Monadnock block, Chicago
Hygienic Suburban Sewage Co, 1123 B'way, N Y

Sewer Braces.
Dunn Mfg Co, Pittsburg, Pa
Potter Mfg Co, 2019 N W ave, Indianapolis, Ind

Sewer and Street Castings.
Sessions Foundry Co, Bristol, Conn
(see also Castings, Iron.)

Sewer Pipe (see Pipe, Vitrified)

Shafting.
Case Mfg Co, Columbus, O
Cresson, Geo V, Philadelphia
Dodge Mfg Co, Mishawaka, Indiana
Poole, Robt, & Son Co, Baltimore, Md

Sheet Iron Work.
Am Sheet Steel Co, Battery Park bldg, New York
Petroleum Iron Works Co, Washington, Pa
Scaife, Wm B, & Sons Co, Pittsburg

Sheet Steel.
Am Sheet Steel Co, Battery Park bldg, New York
American Steel & Wire Co, New York & Chicago

Shutters (Fire Proof).
Kinnear Mfg Co, Columbus, Ohio

Skylights.
National Skylight & Const'n Co, Jersey City, N J
Plenty, Josephus, Jersey City, N J
Valle & Young, Baltimore, Md

Sluice Gates.
Coffin Valve Co, Boston, Mass
Coldwell-Wilcox Co, Newburg, N Y

Smoke Stacks (see Stand-Pipes and Tanks).

Speed Governors.
Foster Engineering Co, Newark, N J

Stamp Mills.
Allis-Chalmers Co, Home Ins bldg, Chicago

Stand-Pipes and Tanks.
Caldwell, W E, Co, 200 East Main st, Louisville, Ky
Chicago Bridge & Iron Co. Chicago
Columbiana Boiler Co, Columbiana, O
Enterprise Boiler Co, Youngstown, O
Gem City Boiler Co, Dayton, O
Girard Boiler & Mfg Co, Girard, O
Hodge Boiler Co, East Boston, Mass
Keeler, E, Co, Williamsport, Pa
King Bridge Co, Cleveland, O
Means & Fulton Iron Works, Birmingham, Ala
North Penn Iron Co, 3d and Sedgley ave, Phila
Petroleum Iron Works Co, Washington, Pa
Riter-Conley Mfg Co, Pittsburg, Pa
Scaife, Wm B, & Sons Co, Pittsburg
Sharon Boiler Works, Sharon, Pa
Smith, Theo, & Sons Co, Jersey City, N J
Snow, T W, 360 Dearborn st, Chicago
Strutners-Wells Co, Warren, Pa
Tallerday Steel Pipe & Tank Co, Waterloo, Ia
Tippett & Wood, Phillipsburg, N J
U S Wind Engine & Pump Co, Batavia, Ill
Warren City Tank & Boiler Works, Warren, O
Wood, R D & Co, Philadelphia, Pa

Steam Shovels.
Austin, Mfg Co, Manhattan bldg, Chicago
Beatty, M, & Sons, Welland, Ont
Bucyrus Co, South Milwaukee, Wis
Hunt, C W, Co, Richmond Terrace, W N Brighton, NY
Marion Steam Shovel Co, Marion, O
Mead, John A, & Co, 7 Broadway, New York
Osgood Dredge Co, Albany, N Y
Souther, John, & Co, Boston, Mass
Thew Automatic Shovel Co, Lorain, O
Toledo Foundry & Machine Co, Toledo, O
Vulcan Iron Works Co, Toledo

Steam Specialties.
American District Steam Co, Lockport, N Y
Crane Co, Chicago, Ill
Darling Pump & Mfg Co, Box E, Williamsport, Pa
d'Estè, Julian, Co, 15 Canal st, Boston
Harrison Safety Boiler Wks, 2166 N 17th st, Phila
Lunkenheimer Co, Cincinnati, O
Manning, Maxwell & Moore, 85 Liberty st, New York
Maxfield, H E, & Co, 136 Liberty st, New York
Parson Mfg Co, 320 Broadway N Y
Robertson, Jas L, & Sons, 192 Fulton st, New York
Union Steam Spec. Co, 151 Franklin ave, Scranton, Pa
(see also Separators, Oil and Steam.)

Steam Traps.
American Blower Co, Detroit, Mich
Buffalo Forge Co, Buffalo, N Y
Crane Co, Chicago, Ill
d'Estè, Julian, Co, 15 Canal st, Boston
Sturtevant, B F, Co, Boston, Mass

Steel (Crucible)
Crucible Steel Co. Pittsburg, Pa

Steel Clips.
Streeter, H A 31 & 33 Indiana st, Chicago

Steel Flanges (Weldless).
Latrobe Steel Co, Girard bldg, Philadelphia

Steel Ties.
Koppel, Arthur, 68 Broad st, New York

Stone.
American Hydraulic Stone Co, Denver, Colo
Bound Brook (N J) Crushed Stone Co
Leopold, J, & Co, 18 Broadway, New York
Thiel, August, Guttenberg, N J
Tomkins, Calvin, 120 Liberty st, New York

Street Railway Supplies.
Brill, J G, Co, Philadelphia, Pa

Street Sprinklers and Sweepers
Austin, F C, Mfg Co, Harvey, Ill
Brill, J G, Co, Philadelphia, Pa
Edson Mfg Co, 285 Atlantic ave, Boston
Good Roads Machinery Co Kennett Square, Pa
Oastler Steam Road Roller, 156 Fifth ave New York

Structural Steel and Iron Work.
Berlin Construction Co, Berlin, Conn
Brooks, T H, & Co, Cleveland, O
Eichleay, John, Jr, Co, Pittsburg
General Supply & Const'n Co, 8-10 Bridge st, N Y
Kratzer, W N, & Co, 3216 Smallman st, Pittsburg
Link Belt Engineering Co, Nicetown, Phila
Means & Fulton Iron Works, Birmingham, Ala
Minneapolis Steel Mach'y Co, Minneapolis, Minn
National Skylight & Const'n Co, Jersey City, N J
N J Foundry & Machine Co, 9 Murray st, N Y
North Penn Iron Co, 3d and Sedgley ave, Phila
Pedrick, E K, Co, 120 Liberty st, New York
Puget Sound Bridge & Dredging Co, Seattle, Wash
Schreiber, L, & Sons Co, Cincinnati, O
Sharon Boiler Works, Sharon, Pa
Snare & Triest, 39 Cortlandt st, New York
Snead & Co Iron Works, ft of Pine st, Jersey City, N J
Streeter, H A, 31 & 33 Indiana st, Chicago
Tippett & Wood, Phillipsburg, N J
Walton Iron Co, Cincinnati
(see also Bridges and Buildings.)

Stump Pulling Machine.
Milne Mfg Co, 584 Eighth st, Monmouth, Ill

Submarine Armor (see Diving Apparatus).

Superheaters (Steam).
Power Specialty Co, 126 Liberty st, New York

Tacks, Thumb
Albrecht, C. R, 62 Fulton st, New York

Tanks.
Berquist, A S, 515 Bedford ave, Brooklyn N Y
Efros, Chas, Co, Bayonne, N J
Hodge Boiler Works, East Boston, Mass
Pacific Tank Co, Los Angeles, Cal.
Petroleum Iron Works Co, Pittsburg, Pa
Riter-Conley Mfg Co, Pittsburg, Pa
Scaife, W B, & Sons, Pittsburg
Steel Storage Elevator & Const'n Co, Buffalo, N Y
U S Wind Engine & Pump Co, Batavia, Ill
Warren City Tank & Boiler Works, Warren, O
(see also Stand Pipes and Tanks.)

Tapes (Steel). See Measuring Tapes.

Tapping Machines (Pipe).
Modern Tool Co, Erie, Pa
Smith, Anthony P, Mfg Co, Newark, N J

Tents.
Murray & Co, 329 S Canal st, Chicago

Test Borings (see Artesian Wells).

Testing Laboratories (see Laboratories).

Testing Machines.
Falkenau-Sinclair Machine Co, 109 N 22 st, Phila
Riehle Bros Test & Mach Co, 1424 N 9th st, Phila

Thermometers (Recording).
Bristol Co Waterbury, Conn

Tie Plates.
Diamond State Steel Co, Wilmington, Del
Railroad Supply Co, Bedford bldg, Chicago

Ties
Koppel, Arthur, 68 Broad st, New York
Wyckoff Pipe & Creosoting Co, Stamford, Conn

Time and Cost Keeping.
Industrial Time & Cost Keep. System, Bantam, Conn

Time Detectors.
Imhauser, E, & Co, 206 Broadway, New York

Tracing Cloth.
Alce, A S, Co, 414 North Broadway, St Louis
Favor, Ruhl & Co, 54 Park Place, N Y
Hardtmuth, L & C, 49 Barclay st, New York
(see also Instruments, Engineering, etc.)

Transformers.
General Electric Co, Schenectady, N Y

Traps (Sewer).
Sewer Trap Mfg Co, 61 Beekman st, New York

Trench Machines.
Carson Trench Machine Co, Boston, Mass
Libbe Engineering & Construction Co, Toledo, O
Potter Mfg Co, 2019 N W ave Indianapolis, Ind

Tubing (Flexible Metallic).
Moore, Chas C, & Co, 32 First st, San Francisco

Turbines.
Camden Water-Wheel Wks, Camden, New York
Dayton Globe Iron Works Co, 7 Ludlow st, Dayton
Leffel, Jas, & Co, Springfield, O
Poole, Robert, & Son Co, Baltimore, Md
Risdon-Alcott Turbine Co, Mt Holly, N J
Smith, S Morgan Co, York, Pa
Stilwell-Bierce & Smith-Vaile Co, Dayton, O
Wood, R D, & Co, Philadelphia, Pa

Turnbuckles.
Cleveland City Forge & Iron Co, Cleveland
Merrill Bros, 467 Kent ave, Brooklyn N Y

Turntables.
American Bridge Co, New York
Boston Bridge Works, 47 Winter st, Boston, Mass
Chicago Bridge & Iron Co, Chicago
Columbia Bridge Co, Pittsburg
Fort Pitt Bridge Works, Pittsburg, Pa
Hunt, C W, Co, Richm'd Terrace, W N Brighton, N Y
King Bridge Co, Cleveland, O
Koppel, Arthur, 68 Broad st, New York
McClintic-Marshall Construction Co, Pottstown, Pa
Mo Valley Bridge & Iron Wks, Leavenworth, Kan
Mount Vernon Bridge Works, Mount Vernon, O
Passaic Steel Co, Paterson, N J
Philadelphia Bridge Works, Pottstown, Pa
Phoenix Bridge Co, 1321 Arch st, Philadelphia
Virginia Bridge & Iron Co, Roanoke, Va
Wonham-Magor Eng. Wks, 29 Broadway, New York

Valve Boxes.
Cayuta Wheel & Foundry Co, Sayre, Pa
Clow, J B, & Sons, Lake and Franklin sts, Chicago
Drummond, M J, & Co, 192 Broadway, N Y

Valves.
Crane Co, Chicago, Ill
Crosby Steam Gage & Valve Co, Boston
Darling Pump & Mfg Co, Box E, Williamsport, Pa
(see also Hydrants and Valves.)

Valves (Gas).
Campbell, J B, Brass Works, Cascade st, Erie, Pa
Chapman Valve Mfg Co, Indian Orchard, Mass
Crane Co, Chicago, Ill
Ludlow Valve Mfg Co, Troy, N Y
Roots, P H & F M, Co, Connersville, Ind

Valves (Gate).
Cayuta Wheel & Foundry Co, Sayre, Pa
Coffin Valve Co, Boston, Mass
Coldwell-Wilcox Co, Newburg, N Y
Crane Co, Chicago, Ill
Miliar, Chas, & Son Co, Utica, N Y
Walworth Mfg Co, Boston, Mass
Wood, R D, & Co, Philadelphia, Pa

Valves (Pressure Regulating).
Ross Valve Co, Troy, N Y
(see also Pressure Regulators.)

Valves (Steam).
Cayuta Wheel & Foundry Co, Sayre, Pa
Chapman Valve Mfg Co, Indian Orchard, Mass
Crane Co, Chicago, Ill
Crosby Steam Gage & Valve Co, Boston
Ludlow Valve Mfg Co, Troy, N Y
Lukenheimer Co, Cincinnati, O

Valves (Stop).
Foster Engineering Co, Newark, N J
Reading Foundry Co, Ltd, Reading, Pa
Sweet & Doyle, Cohoes, N Y
Thompson, J, & Co, Philadelphia

Varnish and Colors.
(see Paints.)

Vault Lights.
Brooks, T H, Cleveland, Ohio

Ventilators.
Buffalo-Forge Co, Buffalo, N Y
Merchant & Co, Inc, Philadelphia, Pa

Vises (Parallel).
Merrill Bros, 467 Kent ave, Brooklyn

Wagons and Carts.
Austin, F C, Mfg Co, Harvey, Ill
Climax Road Machine Co, Marathon, N Y
Columbia Wagon Co., Columbia, Pa.
Good Roads Machinery Co, Kennett Square, Pa
National Drill & Mfg Co, 159 La Salle st, Chicago
Port Huron Engine Co, Port Huron, Mich
U S Sanitary Co, Washington, D C
Watson Wagon Co, Canastota, N Y
Western Wheeled Scraper Co, Aurora, Ill

Water Motors.
Backus Water Motor Co, Newark, N J

Water Softening Plants.
Industrial Water Co, 126 Liberty st, New York
N Y Continental Jewell Filtration Co, 15 Broad st, NY
Pittsburg Filter Mfg Co, Pittsburg

Water Storage Systems.
Acme Water Stor & Const'n Co, Park Row bldg, N Y

Water Wheel Governors.
(see Governors, Water-Wheel.)

Water Wheels.
Cassel Auto Water Motor Co, Seattle, Wash
Dobbs, Abner, Co, Fremont & Howard, San Francisco
Pelton Water Wheel Co, 134 Main st, San Francisco
(see also Turbines.)

Water-Works Tools and Supplies.
Flint & Walling Mfg Co, Kendalville, Ind
Smith, A P, Mfg Co, Newark, N J

Well Drilling Machinery.
American Well Works, Aurora, Ill
Cook Well Co, St Louis, Mo
Star Drilling Machine Co, 104 Fulton st, New York
Williams Bros, Ithaca, N Y

Wharf and Pier Builders.
Atlantic, Gulf & Pacific Co, 13-21 Park Row, N Y
McMullen, Arthur, & Co, 13-21 Park Row, New York
O'Rourke, John F, Park Row bldg, N Y
Phoenix Bridge Co, Phoenixville, Pa
San Francisco Bridge Co, 220 Market st, San Francisco

Wheelbarrows.
Cockburn Barrow & Machine Co, Jersey City, N J
Syracuse Chilled Plow Co, Syracuse, N Y
Steubner, G L, Long Island City, N Y
Western Wheeled Scraper Co, Aurora, Ill

Whistles.
Crosby Steam Gage & Valve Co, Boston
Lunkenheimer Co, Cincinnati, O

Windmills.
Dake Engine Co, Grand Haven, Mich
Flint & Walling Mfg Co, Kendallville, Ind
Temple Pump Co, 15th Place, Chicago
U S Wind Engine & Pump Co, Batavia, Ill

Wire, Wire Rope and Cables.
American Steel & Wire Co, New York & Chicago
Broderick & Bascom Rope Co, St Louis
Leschen, A, & Sons Rope Co, St Louis
Macomber & Whyte Rope Co, 21 S Canal st, Chicago
Roebling's, John A, Sons Co, Trenton, N J
Trenton Iron Co, Trenton, N J
Williamsport Wire Rope Co, Williamsport, Pa

Worm Gearing.
Morse, Williams & Co, Philadelphia, Pa

Wire Fence (see Fencing).

Wood Preserving (see Creosoting).

Wrenches.
Keystone Drop Forge Wks, 20th & Clearfield sts, Phila

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